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The Ancestry,
Life and Work
of
Addison E. Verrill
of Yale University

by
George E. Verrill

PACIFIC COAST PUBLISHING COMPANY
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Life and Work

of

William E. Hall

of Yale University

by

George E. Young

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The Ancestry, Life and Work
of
Addison E. Verrill
of Yale University

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FOREWORD

THE INFORMATION in the following pages regarding the family genealogy has been compiled from a large quantity of manuscript, typed sheets and other data, left by Prof. Verrill, concerning all the known branches of the Verrill family which are descended from Samuel Verrill I and his wife Sarah Stevens and various other families related thereto by marriage.

Apparently the first person to take any particular interest in the family history was Benjamin Verrill, Prof. Verrill's uncle. He prepared a genealogical tree and among the papers left by Prof. Verrill are some of his uncle's original notes made in 1880. About 1860 Prof. Verrill's younger brother, George Verrill, Jr., subsequently an attorney in Portland, Maine, also became interested in the matter and thereafter spent much time and considerable money in searching old records and collecting data. He prepared two extensive genealogical charts which, together with the other data which he collected, are among the papers left by Prof. Verrill. As a result of his brother's researches Prof. Verrill became interested and from about 1900 until his death in 1926, he spent a large amount of time in studying the family history and in collecting data relating thereto. In this work he and his brother closely cooperated until the death of the latter in 1908. He also received much aid from his daughter-in-law, Mrs. Dorothy M. Verrill, widow of his youngest son, who has given much study to genealogy.

The original intention of Prof. Verrill and his brother was to publish the complete genealogy but his brother's death occurred before the work was completed. Prof. Verrill then hoped to publish it himself but his own death came before he could do so.

I am not a genealogist and to put all the data left by my father in shape for publication and publish it, is beyond my ability — mental, physical and financial. My idea is only to get together the data pertaining to our immediate family and its closely related branches so that such records may be preserved for the information of my own children and any other members of the family who may be interested. In so doing I have endeavored to put the data in the form of a narrative rather than in the customary genealogical form, particularly trying to give all information available regarding the appearance, personal characteristics, lives and activities of the various people.

Throughout the following pages the spelling of the name is that used by Prof. Verrill, all his brothers and sisters, his father, grandfather and his uncle Benjamin. Other spellings have been used in the past, and are

still, by other branches of the family and by some of our ancestors, as is explained in Part I.

The information regarding my father's life and work up to the close of 1863 has been taken from his own notes and from two diaries, one of which he kept while a student at Harvard and assistant to Prof. Louis Agassiz and the other while he and two classmates were on a collecting expedition to Anticosti and Labrador. These two diaries I have given to Harvard College Library, with the proviso that they may be temporarily withdrawn at any time by a member of the family for consultation or publication, in part or in toto. For the period after 1863 I have depended upon the numerous notes, letters and other papers my father left and upon my own knowledge and memory.

As I am not a zoologist I have made no attempt to evaluate his work as a scientist but have only tried to tell what he actually did. Happily, Prof. Wesley R. Coe, who was one of father's students, has written several biographical sketches of him* and an excellent biographical memoir, published by the National Academy of Sciences of the United States (Biographical Memoirs, Vol. XIV, 2nd Memoir, pp. 19-66). These papers by Prof. Coe make it entirely superfluous for me to express any opinion regarding father's work as a scientist.

After nearly completing this paper I learned that Harold F. Round, grandson of George W. Verrill, Jr., has been doing a large amount of work on the genealogy of the Verrill and Round families. In the Congressional Library and various state and city libraries he has consulted many genealogical publications, family and town histories, vital records, etc. and thus amassed a large amount of information regarding the Verrill genealogy. Copies of his data he has very kindly sent to me. He estimates that there are between 250 and 300 American ancestors of the Verrill family, of which he has already located and recorded about 200 in over 40 different families and hopes to eventually locate nearly all of them.

Prof. Verrill and his brother were unable to consult many of the publications which Mr. Round has seen and hence their family genealogy is not as complete as his. Moreover, to a large extent, they devoted their efforts to obtaining data concerning all who bore the name of Verrill, descendants of Samuel Verrill I, and did not, as a rule, devote as much time to members of other families related by marriage.

To now attempt to incorporate all of Mr. Round's additional data in this paper would mean rewriting much of it and would make it so long

*Science, vol. 66, 1927, pp. 28-29. Amer. Jour. of Science, vol. 13, 1927, pp. 377-387. Yale Alumni Weekly, vol. 36, 1927, pp. 1053-1054.

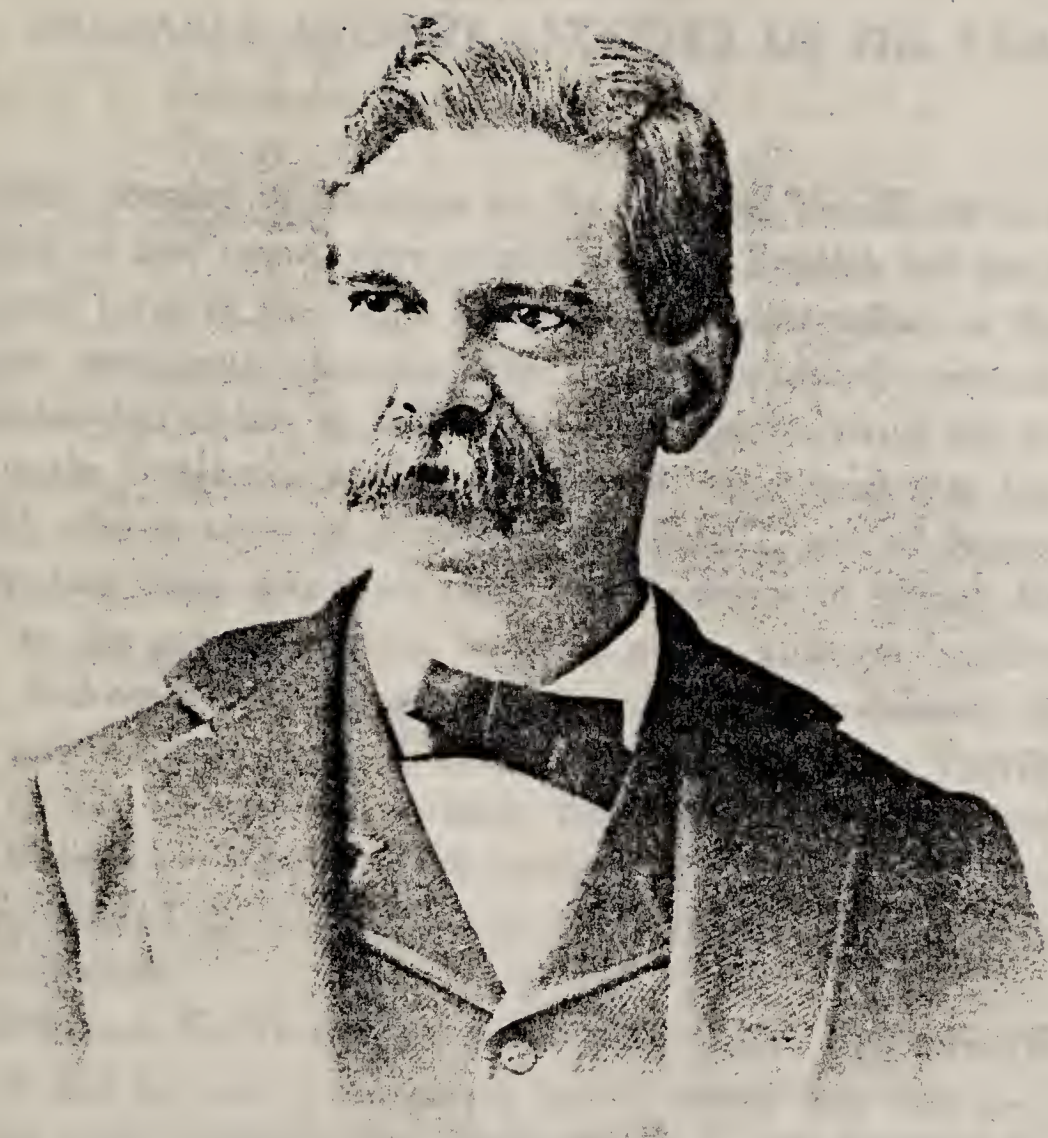
that it would be beyond the limits of my time, strength and funds. That portion of this paper already written has been checked with the data received from Mr. Round and corrections and additions have been made, so that now the genealogy herein, so far as it goes, agrees very closely with his records but it is much less complete.

I greatly hope that Mr. Round may decide to publish all the information he has obtained regarding the Round and Verrill families as it would be of great value, not only to members of those families, but also to many others more or less closely related by marriage.

GEORGE E. VERRILL

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A. E. Verrill

PART I

ORIGIN OF THE NAME AND PROBABLE ANCIENT ANCESTRY OF THE FAMILY

THE FIRST persons in America by the name of Verrill, or of a variation in the spelling of that name, were unquestionably English but the ancient origin and original form of the name are difficult to determine, as the spelling has undergone numerous changes even in comparatively recent years. Prof. Verrill states that as late as 1820 some of his uncles wrote the name "Varrell" but his uncle Benjamin spelled it "Verrill" and said that his grandfather, Samuel II, also so wrote it. However, Samuel III, son of Samuel II and who for twenty-two years was town clerk and treasurer of Minot, Maine, adopted "Variel" as the correct spelling and two of his younger brothers, Davis and William, followed his example. Some of the descendants of these three brothers still use that spelling; others have gone back to Verrill and perhaps to other forms. In America, in early times, the name was usually written as Verrall, Varrell or Verrill. More recently Verrill seems to have been quite generally adopted, except by one or two branches of the family which use Variel or Variell.

In 1904 Geo. W. Verrill, Jr. wrote his brother, Prof. Verrill, as follows:

"Father told me when I was getting up my famous 'tree' that the name had been changed and might originally have begun with an F (say Farrel or Farewell)."

Also when referring in one of his early genealogical charts to our first American ancestor, Samuel, who was born in England, he says:

"There is a legend in the family that he changed his name from Farrell or Farewell but I never obtained anything reliable about it."

This tradition is also referred to by Joshua H. Variel, great-great grandson of Samuel, as follows:

"In 1830 to 1835 there was an effort made to have the records of Liverpool searched and money was raised for the purpose, my father being a contributor, and it was intrusted to one Capt. William Ladd of Center Minot, who was visiting England, to make the search but there was a tradition among the older ones that the name was originally Ferrill and they so directed him to search and he reported that no such person had ever owned real estate in that city. So that name proved a myth."

The search referred to was evidently made because of a family tradition regarding a large amount of property said to have been owned by our

English ancestors. R. H. F. Variel, son of Joshua, in a letter dated May 8, 1895, to Byron D. Verrill, Prof. Verrill's eldest brother, says his father told him a story, which obtained credence in the family for many years, of a "fabulously large property" in the City of Liverpool which formerly belonged in the family. Also that the family in America was founded by three brothers who came from England because of proscription and confiscation of their estates, and settled in Gloucester.

In England the vital statistics, probate records, inscriptions on grave-stones, etc. show that there have been about 50 variations in the spelling of the name during the last 400 years. In many of the early records the initial V is replaced by F, the two letters then being frequently interchangeable, and the name appears as Farel, Farrell, Farhul, Fairhall, etc. That these were variations of the same name is proved by the records themselves. For example, the Ardingley, Sussex, parish registers contain numerous entries like the following:

- 1627. Thomas Verrell (Fairhull)
- 1632. John Virroll alias Fairehall
- 1635. John Fairehall alias Virroll
- 1637. Jane Fairhall alias Virroll
- 1670. William Verrall (Fayerhall)
- 1681. Anne Fairhall alias Virrall

In early times spelling was, to a considerable extent, a matter of personal choice but many, perhaps most, of the variations were due to the clerks or scribes who made the entries and spelled the name as it sounded when given to them verbally. Even today it is frequently difficult for people to spell the name correctly by hearing it pronounced and it is quite common for them to begin it with F instead of V. In modern times the spellings most used in England are apparently Verrall, Varrall and Verrill. In view of the many variations in the name, different spellings often being used by members of the same family and even the same person spelling his name differently at different times, it is evidently impracticable to attempt to trace ancestry or relationship by the way the name is spelled.

In America the name is an uncommon one except in some parts of Maine and New Hampshire. In England it is very rare outside of Sussex and Kent, except in Yorkshire, where there is a numerous and long established colony of Verrills near Whitby. In Sussex the family has been prominent for several centuries. Barnard Verrall, counselor, Lewes, Sussex Co., England, in a letter dated June 26, 1907, to Dr. A. D. Variell, Waterbury, Conn., stated that the Deputy Town Clerk had searched the records at Lewes and found that Richard Verral (sic) was High Constable there in 1600 and that other Verralls in

succession held the office down to 1820. Still others held the office of Town Clerk for many years. "A Compendius History of Sussex, Topographical, Archaeological and Anecdotal", 1870, by Mark Anthony Gaven, in Vol. 2, p. 31, states.

"There are in Sussex few parishes of more interest than Lindfield, either for the antiquary or artist. The well known and respected Sussex family of Verrall seems to have originated here."

Regarding Lewes, on page 20 the same author writes:

"The manor of Southover subsequently passed to the families of Lufton, Darrant and Verrall, William Verrall being the existing lord."

In "The Homes of Family Names in Great Britain," by H. G. Guffy, is the following:

"Verrall is an old East Sussex name, well known in Lewes in the 17th and 18th centuries and still represented there."

The late well known and distinguished English naturalist George H. Verrall wrote to Prof. Verrill at considerable length regarding the name and genealogy of the family. The following extracts are from his letter dated at Sussex Lodge, Newmarket, July 26, 1889:

"I have not the least doubt that we come from a common stock, and my father used to assert that all Verralls originated from the village of Barcombe in Sussex. I don't know that there are any grounds to support this and he may have referred only to the 'modern' Verralls. . . . There are in Lewes and its neighborhood now about three distinct families of Verralls, when I say 'distinct' I mean the relationship is too remote to be recognized, yet my brother was once for a short time, about 1879, in a book-binding business and while there a genealogy came under his hands concerning old William Verrall (he is over 90, born before 1800) of Southover (a suburb of Lewes) and there I believe he saw clearly the common stock we came from. . . . My belief is that all the English Verralls came from Sussex, they are exceedingly rare out of that county and I think I am the only one in the eastern counties except a professor at Cambridge."

Although Sussex is now, and has been for hundreds of years, the principal location of the various families of Verralls, Varrells, Verrills, etc., there have also been a number of families by these, or similar names, living in Kent, as appears from old records, some early in the 17th century. In 1899 Daniel Varrall, Esq., of London wrote:

"There are several Verrells in Kent, rather prominent men. I have some parchments relating to William Varrell having bought small vessels and taking apprentices from 1790 to 1803. That was at Rochester and Gravesend, Kent County. In my early days I was taken there several times to see relatives. I am now over seventy."

In 1859 a Rev. George Verrill was pastor of Bromley Chapel, Kent. As Sussex and Kent are adjoining counties it would seem altogether probable that during hundreds of years members of the Sussex families should move into Kent. The distance in a straight line from Lewes, Sussex to Rochester, Kent, is only about forty miles, a move which would not have been difficult

even in early times. There are many more persons by the name of Verrall, or similar names, in Sussex than in Kent and it seems reasonably certain that those in the latter county are descendants of migrants from the former one.

Regarding the Yorkshire colony of Verrills the case is not quite so clear. In a letter to Mrs. Dorothy M. Verrill, Vancouver, B. C., dated at Whitby, Yorkshire, in 1911, Mr. Louis Tracey, the author, says:

"At a fishing village called Staithes, on the coast, about twelve miles north of Whitby, there is an absolute colony of Verrills. Now, this place was one of the most inaccessible spots in Yorkshire before the coast railway was made twenty years ago and, as a consequence, the inhabitants must have sprung from stock established there for many centuries. As the Verrills are certainly the most numerous and important family in the township, you may regard it as a certain fact that they have been Yorkshire bred and born for hundreds of years.

"The Staithes folk are noted as the boldest sailors and fishermen on the coast. Until recently they disliked strangers and had peculiarities of speech and habits which singled them out from their neighbors, from whom, by the way, they were cut off by a savage coast line and bleak moors."

Sir Thomas Jenner Verrall, Entry Hill, Bath, England, has expressed the opinion that the Yorkshire Verrills, as well as those from the Midlands, are all branches from the original Sussex family and Mr. George H. Verrall, in a letter to Prof. Verrill, heretofore quoted, expresses the same belief. Notwithstanding Mr. Tracey's opinion that the Yorkshire colony has been there many centuries, it seem highly probable that they originally came from Sussex. After all, they certainly are not descendants of the original inhabitants and their ancestors must have come from elsewhere to Yorkshire. Verrill and its variations are uncommon names, not such as are usually borne by Englishmen and the derivation of which may be easily accounted for, like Smith, Johnson, Brown, etc. As will be shown hereafter, the derivation of the name as it appears in Sussex is fairly certain and it is much more reasonable to suppose that some of the Sussex Verrills, in time long past, found their way, by design or accident, to Yorkshire than to attempt to account in any other way for this colony with such an unusual name.

A number of theories and explanations, some of them rather far-fetched and fantastic, have been advanced regarding the origin of the name and family. The most plausible one and that which seems to have been adopted by most of those who have studied the matter, including Prof. Verrill, is that the name is of Norman origin and the family is descended from a Norman who came to England with William the Conqueror. This theory is strongly supported by the fact that Sussex, where the family evidently originated, was a Norman stronghold for a very long period. After the Conquest William I granted the whole barony of Lewes to William de Warenne, who rebuilt the old castle, said to have been founded by Alfred the Great, and lived

there with his wife, Gundrada. The descendants of Earl Warenne continued to hold the barony for about 350 years.

One of Prof. Verrill's scientific correspondents in England, who was an expert in the study of names, gave him the following explanation of the origin of the name:

"In the 'Roll of Battle Abbey', which is the best extant catalogue of the Norman gentry who came over with William the Conqueror and were in the Battle of Hastings, there is recorded one 'A. de Waruile'. It is well known that W and V were interchangeable at that time. So that it is not unlikely that Waruile, after many years, dropping the 'de', became corrupted to Varuil, Variel, Verrall and Verrill in Sussex County, which was for a long time dominated by the Normans, for there was an early Norman castle at Lewes."

In Leland's version of the "Roll of Battle Abbey" the name "de Waruile" does not appear but he does give "Deverell". If the Norman "De" be dropped, as it very commonly has been in many English families, the name becomes "Verell", a form which occurs in the Sussex records. It is also stated that the name "D'Evrolles", probably another variation of the same name, is recorded in Sussex County as early as 1165. Mr. George H. Verrall, a part of whose letter of July 26, 1889, to Prof. Verrill, is quoted later on in the same letter says:

"I think the name comes from the common Devereux, Deveril, etc., after cutting off the prefix De. There are many cases in which the noble De was lost and it would be most probable when crossing with the plebian Saxon."

In view of the foregoing, the following conclusions seem reasonably certain, namely:

1. All English and American families by the name of Verrall, Varrell, Verrill and similar names, originated in Sussex County, England.
2. The name, with its numerous variations in spelling, is of Norman origin.
3. The various branches of the family all had a common progenitor, a Norman who came to England with William the Conqueror in 1066.

The earliest unquestionable information we have regarding an American ancestor by the name of Verrill in our own branch of the family is that concerning Samuel Verrill, who married Sarah Stevens of Gloucester, Mass., May 7, 1731, and who was the great-great-grandfather of Prof. Verrill. He was not, however, the first person of that, or a similar name, mentioned in the New England records. The earliest such record given by Prof. Verrill is that of "John Varrel of York", recorded as marrying Sarah Andreus (or Andrews) of Kittery in 1712. Also in the Registry of Deeds of York County, Maine (then a part of Massachusetts), under date of May 8, 1723, a deed

is recorded from Mrs. Susanna Andreus (or Andrews) of her homestead in Kittery to her son-in-law, John Varrel of the town of York, in consideration of his supporting her for the remainder of her life.

From 1718 to 1750 there were recorded at least eleven marriages, or intentions to marry, of six men (including our ancestor Samuel) and five women by the name of Varrell, Verrall, etc., of whom six were from Ipswich and Gloucester, two from Isle of Shoals, and one each from Rye and Kittery. One of these men, John Varrell from Isle of Shoals, who married Rachel Sadler in 1737, had ten children, some of whom subsequently married and settled in Rye and Portsmouth, N. H. and York County, Maine, where many of their descendants are now living. There are also Verrills, probably descendants from some of the marriages named above, living at Vinal Haven, Rockland and at one time, perhaps still, at Mount Desert.

What relationship there was between these early Verrills is not known. It is very probable that most of them came directly from Sussex or Kent and undoubtedly they, or their ancestors, originated there. However, it should be noted that Mr. George H. Verrall, in his letter to Prof. Verrill, said that there were then (1889) three "distinct" families of Verralls in Sussex, meaning that the relationship was too remote to be recognized, though doubtless they all came originally from a common stock. So far as we have been able to ascertain, the relationship between our ancestor and the other Verrills then in America was too remote to be traced. In this connection it should be noted that our ancestor, Samuel, was born in Liverpool and hence there would be less chance of a close relationship between him and any Verrills coming directly from Sussex or adjoining counties. Though he was born in Liverpool, his father, or earlier ancestor, doubtless came from Sussex but may not have gone directly from there to Liverpool. Such ancestor may have first migrated to some other county, most likely Kent, and thence he, or his descendants, moved to Liverpool. It may well have been a number of years, perhaps several generations, between the time when his ancestor left Sussex and when Samuel was born in Liverpool. A careful search of the old English records might furnish information regarding Samuel's family, but so far as I know, no such search has been made.

It now remains to consider the possibility of our descent from the Yorkshire Verrills. According to Joshua Variel, Samuel's father was wealthy, perhaps a Liverpool merchant, but the Yorkshire Verrills were sailors and fishermen. As stated by Mr. Tracey in his letter previously quoted, that part of Yorkshire where they live was, until about fifty years ago, very isolated and it is unlikely that any of them migrated to Liverpool and become wealthy. Mr. Tracey also particularly speaks of their marked peculiarities of speech

and habits, but our American ancestors did not use the Yorkshire dialect nor is there any record of their having any peculiar habits. Our ancestors were, by choice, farmers, not fishermen nor sailors.

However, some of the early American Verrills were fishermen and may have come from the Yorkshire colony. When those from Isle of Shoals made their marks in signing deeds, etc., the mark was an anchor. The Ipswich Verrills, when signing with a mark, did not make an anchor but a cross or some farming tool, which is very good evidence of their origin, for the Sussex Verrills have been farmers and land owners for five hundred years or more, not seafaring men. After careful consideration of this matter, both Prof. Verrill and his brother, Geo. W. Verrill, concluded there was no reason to suppose that our ancestors came from Yorkshire but on the contrary, every reason to believe that they originated in Sussex. It is believed that their conclusions were entirely correct.

It may be of interest, but of no particular significance, to know that some of the branches of the family in England have a coat of arms. Mrs. Dorothy M. Verrill describes the arms on the letter-head of Mr. Frank Verrall of Southover Manor, Sussex, as follows: "On a mount vert, a bull under an oak tree, all proper. Crest, a bull's head with a sprig in its mouth." She states that these arms are given in heraldries under "Verrall or Verrill". So far as I know, *none* of the American branches of the family has used this, or any other, coat of arms.

PART II

DANIEL VERRILL AND HIS AMERICAN ANCESTORS AND DESCENDANTS

SAMUEL VERRILL, Daniel's grandfather, was born in England about 1700-1705.* He is our first ancestor by the name of Verrill of whom we have any positive knowledge. The first record of him in America is in 1730, when his "Intentions of Marriage" to Sarah Stevens of Gloucester were published at Ipswich. They were married in Gloucester May 7, 1731. We have nothing definite regarding his ancestry or that of his wife. He probably died soon after his marriage, as he left but one child, Samuel Jr., born May 4, 1733. The only information we have regarding his birthplace and death and that of his wife is that furnished by Benjamin Verrill and Joshua H. Variel.

Benjamin, the third son of Daniel and great-grandson of Samuel Verrill, was the first of the American Verrills to take an interest in the family ancestry and history. He was well educated, had been a school teacher and held various public offices. As early as 1840 he made a "family tree" and some of the genealogical charts and tables which he prepared are now among the papers which Prof. Verrill received from his brother Geo. W. Verrill. One memorandum in Benjamin's own handwriting made in 1858, states:

"Samuel Verrill, Jr., was the son of Samuel Verrill who was born in Liverpool, Eng., fled to America in time of the Religious Persecution."

The same statement regarding Samuel's birthplace appears in a chart which Benjamin filled out in 1880, and he therein states that he died at "Cape Ann" and that his wife, "Sarah Stevens", was born and died at "Gloucester, Mass." As Benjamin was nearly seventeen years old when his grandfather died, he probably got his information from him and he, in turn, from his mother, so that it seems to be reliable.

Our other information comes from Joshua H. Variel, son of William, II, and great-great-grandson of Samuel Verrill. Joshua was born at Minot, Maine, Aug. 7, 1816. In 1836 he went to St. Louis, Mo., subsequently to Indiana and eventually to California, where he died Dec. 12, 1898. In 1872 he corresponded with Prof. Verrill, himself, and from 1890 to 1895 with his brothers, B. D.

*See Part I regarding various spellings of the name and probable origin of the family.

and Geo. W. Verrill. During this correspondence he gave much information regarding his branch of the family and told of the old family traditions he had heard when a boy in Maine. He apparently had an exceptionally good memory. His eldest son, R. H. F. Variel, an attorney, writing under date of June 30, 1890, to Geo. W. Verrill, says:

"His recollections of the family traditions and names are remarkably clear and accurate, he being a man of a great deal more than average ability, so far as intellect is concerned."

In a letter dated Quincy, Calif., July 6, 1890, Joshua Variel says:

"I can only write from the traditions of the old people, when I was a boy, but which are still fresh in my memory but I have no dates to refer to, for they had none. They ran thus: During the persecutions of Protestants in England a man of wealth in Liverpool had three sons. He was a Catholic, and the sons, having espoused the Protestant faith, were by him disowned and rather than give up their religion they came to America and settled at Cape Ann, Mass. One was our ancestor, one was a bachelor named Joseph, the other was lost at sea. Our ancestor died of yellow fever in the West Indies but left a son, our g.g.father; and when the Revolution broke out, g.g.father Variel with his sons Samuel, the eldest, and Davis enlisted in the army for one year, and served in war in the troops that guarded Burgoyne's army while they were prisoners at Winter Hill; and at their discharge, with others, they chartered a schooner and went up to Portland, and thence by land to Bakerstown, since called Minot, and settled in the woods. Their sufferings and hardships are hard for the present generation to comprehend. There were but 12 families in that town prior to their arrival. There they vegetated and multiplied to an alarming degree in the direct and lateral branches."

It will be noted that that portion of the "tradition", as Joshua calls it, pertaining to Samuel, Jr., and his sons agrees with the known facts obtained from reliable records. His story regarding the birthplace of Samuel, Sr., and the reason for his leaving England also agrees exactly with the statement of Benjamin Verrill, although there was an interval of over thirty years between the two accounts and in the letter, quoted above, Joshua also says:

"I presume I am the oldest of the name and race at this time, but I do not know, for I have been so long away from Maine that I know nothing about it or its people now."

It will be noted that Benjamin and Joshua do not agree as to where our ancestor died, the former naming "Cape Ann" and the latter "the West Indies." However, Prof. Verrill states that traditions in other branches of the family agree substantially with Joshua's account. One says: "He died on a voyage to the West Indies", the cause of death not being named. Another places his death at Bermuda, then officially recognized as one of the West Indies. Had he died at Cape Ann (Gloucester) there would probably be some record there of his death but no such record has been found. All things considered, it is believed that Joshua's account is substantially correct.

Daniel's father, Samuel Jr., only child of Samuel and Sarah (Stevens) Verrill, was born in Gloucester, Mass., May 4, 1733, bapt. April 20, 1734,

and died in Minot, Me., May 20, 1821. Jan. 7, 1755, he married Eunice Bray of Gloucester, by whom he had eleven children, all, except Daniel, being born in Gloucester and two of them dying in childhood. She was born Aug. 30, 1735, died July 27, 1797, and was the daughter of Aaron and Elizabeth (Davis) Bray of Gloucester and a great-granddaughter of Thomas Bray, shipwright, farmer and early settler of Gloucester, who was born in England in 1604 and married at Ipswich, May 3, 1646, Mary Wilson, by whom he had nine children, all born in Gloucester. He died Nov. 30, 1691, and his wife March 27, 1707. Samuel Verrill II was married again, Oct. 23, 1798, at Minot, to Elizabeth Flanders, who died Oct. 20, 1815. Apparently there were no children by this marriage.

Samuel Verrill II and his two oldest sons, Samuel III and Davis, were soldiers in the Revolutionary War. Early in the war the enlistments were for very short terms, often for only two or three months, to give those who were farmers, as most of them were, a chance to plant and harvest their crops. Some of the men reenlisted with little delay; others had to remain at home for some time to attend to their farms before enlisting again. The elder Samuel served four such enlistments, viz.:

1. July 22 to September 30, 1776, as matross (gunner's mate) in Capt. William Ellery's 1st Artillery company, stationed at Gloucester for seaboard defense.
2. October 1 to December 31, 1776, in same company, with same rating and station.
3. November 12, 1777, to February 3, 1778, in Capt. Mark Pool's company of Col. Jacob Gerrish's regiment of militia, stationed at Charlestown for guard duty.
4. Later in 1778, in same company, stationed at Cambridge for same duty.

The last two enlistments were for duty guarding the prisoners of war taken when Burgoyne surrendered, October 17, 1777, after the battle of Saratoga.

Samuel Verrill, Jr., was a farmer by occupation and after he and his sons left the army he moved, late in 1778, from Massachusetts to Maine; first to New Gloucester and later, 1781-1783, he settled at what was then called Bakerstown,* on a farm later known as the "Weeks Place", near what was afterwards called Center Minot. Here he remained the rest of his life and it was here that Daniel Verrill was born. When he first settled in Bakerstown there were only twelve other families there. Moose, deer, bears, and various kinds of small game and fur bearing animals were abundant and of great aid to the settlers in their struggle for existence. He is said to have been rather eccentric in many ways, particularly by never being in debt. His favorite maxim was, "Owe no man anything but love one another." Accord-

*Bakerstown was incorporated in Poland in 1796 and subsequently formed part of Minot.

ing to his grandson, Geo. W. Verrill, who remembered him well in his later years, he had very red hair when he was young and a fiery temper which he retained in his old age.

Daniel,* grandfather of Prof. Verrill and youngest child of Samuel II and Eunice (Bray) Verrill, was born in Poland (later Minot), Maine, June 27, 1781, and died in Greenwood, December 23, 1852. He was married in Poland, December 4, 1800, by Rev. Jonathan Scott, the first minister in the town, to Eunice Cordwell, who was born in that town July 21, 1780, and died in Greenwood, July 9, 1859. She was a daughter of Wm. Cordwell II (b. in Mass. August 11, 1755; m. 1779; d. February 16, 1838) and his wife Tryphosa Leach (b. 1754; d. June 6, 1844) and granddaughter of Wm. Cordwell I (b. 1725-30; m. about 1750) and his wife Abigail Bray (b. 1727-28) whose father, Moses Bray, was born in England about 1696. Tryphosa Leach was the daughter of Elijah Leach (b. 1721, m. 1754, d. 1787) one of the first settlers of Poland, coming there from Massachusetts.

The Leach family was one of the earliest and most prominent of the settlers of Salem, Gloucester and Beverly, Mass. Lawrence Leach, the emigrant ancestor, was born in England about 1580 and died in Salem, June 24, 1662. He was sent to America by the Massachusetts Bay Co. and reached here on the ship *Talbot*, June 27, 1629, accompanied by his wife, Elizabeth, and some of his children. He was a freeman of Salem in 1630, a founder of the first church of that town and one of seven men who managed the affairs of the town in 1638-42. He was engaged in farming and milling and he also built and operated the first iron foundry in the colonies. His family comprised eight sons and two daughters. The two youngest sons and perhaps one daughter were born in Salem. All the other children were born in England and one son, Clement, remained there. The other children came to America, most of them with their parents but at least one, Margaret, subsequently. John and Richard, the third and sixth sons, are direct ancestors of our branch of the Verrill family; Tryphosa Leach, my father's great grandmother, who married Wm. Cordwell II, being a direct descendant of both of these brothers. The genealogy of the Leach family, like that of many other early colonial families, is very confusing. The families were large, there was much intermarrying, middle names were rare and often in the same generation and even in the same family there were two or more persons with identical names, it being customary when a child died young to give the same name to a younger child.

*Another son named Daniel, their eighth child, baptised at Gloucester February 3, 1771, died in infancy or early childhood. There were also two daughters named Eunice, one being their first child, baptised August 10, 1755, who died young, and their fourth child, baptised September 20, 1761.

John Leach I, third son of Lawrence, emigrated to America with his parents in 1629 and was granted land in Salem in 1637. About 1646 he married Sarah Conant (b. 1628, d. 1681) daughter of Roger Conant. After her death he married Sarah Waldron. He became a member of the First Church of Salem in 1648, of the First Church of Beverly in 1667, a freeman in 1681 and served in King Philip's War. His son John II, baptised November 19, 1648, was a twin, his sister, Sarah, died young. He married Mary (?) and moved to Wenham, Mass., where all of his six children were born. He served in the Narragansett War and apparently one of his younger brothers died in King Philip's War. His youngest child, William Leach, (about 1678-1735) married, February 10, 1704, Tryphosa Herrick, b. November 16, 1681, daughter of Joseph Herrick I and his wife Mary Endicott, granddaughter of Governor John Endicott. Elijah Leach, (November 22, 1721-November 25, 1787), son of William and Tryphosa, married, November 3, 1751, Eunice Herrick (bap. August 31, 1725), daughter of Joseph Herrick II (November 16, 1695-January 12, 1777) and Mary Woodbury (b. April 18, 1697, at Beverly) daughter of Robert Woodbury and Mary West. Tryphosa Leach (b. 1754) was the grandmother of Geo. W. Verrill and the daughter of Elijah and Eunice Leach. She married Wm. Cordwell II, in 1779 and was the mother of Eunice Cordwell, b. July 21, 1780, who married Daniel Verrill December 4, 1800 and died July 9, 1859. Joseph Herrick II, father of Eunice, was the son of Samuel Herrick (bap. 1670, d. 1745) and his wife Sarah (b. August 31, 1673, d. 1711) who was a daughter of Sgt. John Leach, whose genealogy is given below.

Capt. Richard Leach (1618-1681), the sixth son of Lawrence, the emigrant, was born in England about 1618 and came to America with his parents. About 1642 he married Sarah (b. about 1622), daughter of Ann Fuller, by whom he had seven children. He joined the church September 1, 1648, became a freeman in 1665, was a lieutenant, 1675 and captain, 1677, in the Massachusetts Militia. Lt. Nathaniel Putnam, grandfather of General Israel Putnam of Revolutionary fame, was one of his lieutenants. He was granted land in Salem in 1638 and resided on a farm adjoining that of his brother John I. Sgt. John Leach (1647-March 5, 1711) was the oldest child of Richard and his wife Sarah. He married, May 20, 1667, Elizabeth Flint (May 22, 1647-February 8, 1719), daughter of Thos. Flint who was born in Matlock, England, 1603, died April 15, 1663. Sgt. Leach and his wife had eight children. Their second child, Sarah II (August 31, 1673-1711) married, May 25, 1691, Samuel Herrick, son of Capt. Henry Herrick II and Lydia Woodbury. During King Philip's War Sgt. Leach served in 1675-76 in the companies of Captains Daniel Henchman and Saml. Mosley. Elijah Leach and his father, William, each married a woman by the name of Herrick, Elijah's

wife being Eunice Herrick and his mother having been Tryphosa Herrick, but they were from different branches of that family.

Joseph Herrick I (bap. June 6, 1645, d. 1717-18), father of Tryphosa Herrick, lived at Cherry Hill, Salem. He first married (1665-66) Sarah Leach I (1648-1674), daughter of Richard Leach and Sarah Fuller. After her death he married, 1678, Mary Endicott, mother of Tryphosa. He was constable of Salem during the witchcraft trials and at first was active in that affair but subsequently repented and asked to be forgiven. During King Philip's War he was a corporal in Capt. Gardner's company and took part in the capture and burning of the Narragansett Indian fort, December 19, 1675.

All of our six Herrick ancestors, born in America and named above, were descendants of Henry Herrick I, who was born in Beau Manor Park, Leicestershire, England, August 16, 1604; emigrated to Salem in 1629 and died in Beverly, Mass., 1671. He was the fifth son of Sir William Herrick of London and Leicestershire, England, and was named Henry by command of Prince Henry, eldest son of King James I. He was a member of the first church in Beverly and Salem in 1636. About 1630 he married Edith Laskin (b. 1614, d. about 1676), by whom he had eight children. His father, Sir William (1557-1653), was a prosperous goldsmith and merchant in London. He became very wealthy and purchased, from the estate of the Earl of Essex, Beau Manor Park in Leicestershire, which was still held by the family in 1885. He was Ambassador to Turkey from Queen Elizabeth in 1596, a Member of Parliament several times and was knighted in 1604 and made a baronet for drilling a hole in a diamond. He married, May 6, 1596, Joan, daughter of Richard May, of Mayfield Place, Sussex.

In a genealogical register of the Herrick family, published in 1885*, the ancestry is traced back over 1,000 years to Harold Gormson, King of Denmark, whose son Ericke invaded and conquered East Anglia about 870 and who was afterward defeated by Alfred the Great and compelled, with his followers, to repeople the districts he had laid waste, the government of which he held as fief of the English crown. Later he again attempted to overthrow the English, was defeated by Edward, son of Alfred, and subsequently was killed by his own subjects because of his severe government. At the time of the Norman Conquest (1066) the name and family was represented by Eric the Forester, a descendant of Ericke the Dane, and who lived and died in Great Stretton, Leicestershire. Eric raised an army to repel the Normans and

*"Genealogical Register of the Name and Family of Herrick, from the settlement of Henerie Hericke, in Salem, Mass., 1629 to 1846, with a concise notice of their English Ancestry." By Jedediah Herrick. Bangor, 1846. Revised to 1885 by Lucius C. Herrick, M.D.

played an important part in the war. Later he was taken into favor by William and given important offices and commands. Leicestershire continued to be the seat of the family and among the numerous descendants of Eric the Forester who are named in the publication above cited are Sir William Eyryk, Knight of Stretton, who attended Edward, Prince of Wales, known as "The Black Prince", in his expedition into Gascony in 1355; also Thomas Eyrick, gentleman, Member of the Corporation of Leicester, who died in 1515 and is buried in St. Martin's Church, Leicester. One of his sons, Nicholas, Mayor of Leicester in 1552, bought St. Martin's Church during the Reformation in 1547, paying 2s8d. Another son, John Eyrick or Heyrick (1513-1589) married about 1537, Marie (1514-1611) daughter of John Bond. They lived together in the same house for 52 years and raised a family of twelve children, all that were born. She died at the age of 97, leaving 142 living descendants. Sir William Heyrick, father of Henry Herrick, the emigrant ancestor of the American Herricks, was the eleventh child of John Heyrick and Mary Bond.

It will be noted that the family name has undergone various forms and spellings. In the genealogical register previously cited seventeen different forms of the name are given. Some are: Eric, Erik, Ericke, Irik, Eyryk, Herik, Hearicke, Herrick, Eirikr, Erryk and Heryck.

The same publication gives the following description of a coat of arms granted by the Herald's Office to two members of the family:

"In the year 1598 was granted from the Herald's Office, Unto Robert and William Herick, the sonnns of Thomas Herick, alias Erick of Houghten in the Countie of Leicester; Gentlemen, and their posteritye forever, a certeyne CREST or BADGE namelie: On a wreathe of their coloures, a BULL'S HEAD Argent, yssuing forth of a LAURELL GARLAND. The MUSSEL, EARES and HORNES tipped Sable. To be annexed and borne with their Ancient Coat of Arms, which is SILVER, a fesse VERRAY, ORR and GULES." "Motto. Virtus omnia nobilitat".

Daniel Verrill was less than 19½ years old and his wife was less than a year older when they were married. For between 17 and 18 years they lived at Minot, apparently at first with his parents, as one or more of their oldest children were born on the "Weeks Farm", his father's homestead near Center Minot. In Minot young Daniel learned the trade of carpentry and house-building and practised it very successfully. In 1818-1819, when about thirty-seven years old, he moved from Minot to Greenwood and settled on Patch Mountain, also known as Furlong Mountain and Herrick Mountain. Here he first built a log house and later, lower down on the slope of the hill, a framed house and large barn. In this house he lived the remainder of his life.

In addition to clearing and cultivating his large farm he continued to work as a housebuilder and is said to have erected 144 framed houses and barns in Greenwood and the adjacent towns. He also did other carpentry

and made ox yokes, heavy sleds for hauling lumber and firewood, cart bodies and various farm implements for his neighbors and himself. All of this work, including the hewing of the heavy pine timbers for the frames of the buildings, had to be done by hand, as there were no sawmills within many miles. Doubtless it would have been impossible for him to have carried on both the farm and his building business without the help of his sons. He had eight sons and one daughter who reached maturity and the four oldest boys were from about 13 to 17 years old when he moved to Patch Mountain. His third son, Benjamin, born in 1804, worked at house building when young and his sixth son, George W., born in 1811, learned the trade of ship carpenter and housebuilding and followed the latter, which he learned in part from his father, until 1844, when he was forced to give it up because of a serious injury. Both of these sons helped their father on many of the buildings which he erected and later George W. built a number of houses and barns, some on his own account and some in company with his brother. Daniel Verrill's fourth son, Ichabod, born in 1805, never married but lived with and helped his father as long as he lived and continued to run the farm for a time after his father died.

Prof. Verrill states that he remembered his grandfather as a strong, good looking, gray haired, kindly old man and a member of the Methodist Church, like his wife and some of his children. His most remarkable trait was that he was strictly temperate, for in those early pioneer years temperance was almost unknown and nearly everybody drank, frequently to excess. Liquor was cheap, New England rum, the common drink, retailing for as little as twenty-five cents per gallon and forming part of the stock in trade of every grocery store as much as molasses or tea. Even the ministers drank when calling on their parishioners and liquor was served at all social gatherings and also at funerals. The frames of buildings were at that time put together while lying flat on the ground, the timbers being fastened together with mortise and tenon joints and hardwood trenails. When the framing was completed each side and end of the building was raised up into its proper vertical position and secured in place. This was called a "raising" and as much heavier timbers were then used than is customary today, it was a job requiring considerable manpower, ordinarily supplied by neighbors and friends from far and near. At these "raisings" there was usually considerable drinking, sometimes resulting in accidents. Daniel could not prevent drinking entirely for it was a case of no liquor, no help, but it is recorded that he never allowed it to be used until after the frame was up and secured in place.

Prof. Verrill remembered his grandfather's homestead very well. In his notes he states that the house was located on a crossroad running west from a point opposite the old cemetery on the main county road over Patch Moun-

tain, which was the one used by all stagecoaches and other vehicles going to Canada. The house was about half a mile from the main road. He says that the crossroad was then a fairly good, country road, kept in good repair, but that when he was last there (1910-1915) it was a mere lane, nearly overgrown by trees and bushes and so out of repair as to be nearly impassable. The houses which were once situated along it were all gone and the farms neglected and much grown up to trees.

His grandfather's house was built on rising ground and was connected with the large barn by several sheds and out-buildings, one of which was used as a carpenter shop. This line of buildings protected the cattle yard from the cold north winds in winter. In front of the house was a deep well covered by a house. The bucket was raised by means of a huge, homemade, wooden wheel and axle, a large rock being attached to the axle by a rope to act as a counterweight. This was an unusual arrangement and hence Prof. Verrill remembered it very clearly. He states that the well furnished excellent water, but its proximity to the cattle yard would now be considered dangerous. Across the road from the house was a large orchard with some very good apple and cherry trees and there was also a maple grove where they made maple sugar in the spring.

Prof. Verrill left an excellent word picture of his grandmother. He says she was small in stature but lively and vigorous like her twin brother William and was a sympathetic, gentle and loveable woman, esteemed by all her neighbors for her kindness, generosity and amiability which nothing ever ruffled. She was always ready to help in times of illness and death and was particularly fond of children, who always liked to visit her. She kept a supply of cookies and other goodies put aside for her children callers and allowed the small boys to climb her cherry trees when the fruit was ripe. It was said that she never struck a child of her own or of anybody else. She was also fond of pets and usually had some cossets (orphan lambs) which she brought up on a bottle and which frequently became almost too tame. She also had other pets and a large flock of white geese.

Like most country women of her time she did her own housework, spun the yarn from the wool of their own sheep, wove the cloth and made and mended the clothes of her numerous children until they were grown up.

She always had a fine, large, old-fashioned flower garden, the best of any in that vicinity. It was surrounded by a high and wide stone wall on the top of which she had planted prikly pear, cactus and houseleeks. She was enthusiastic over her garden which was full of sweet herbs and old-fashioned flowers, among which Prof. Verrill says he best remembers, sweet williams, clove pinks, mullen pinks, southernwood, red tulips, lilacs, white lilies, red

peonies, red and white roses, hollyhocks, etc. In the garden and in suitable places about the farm she also had patches of medicinal herbs, such as camomile, wormwood, tansy, sweet flag, etc., for she was well versed in the use of herbs for medicinal purposes and always kept a supply of dried herbs in the attic but they were generally of much greater benefit to her neighbors than to her own family, who were seldom ill.

Prof. Verrill describes the location of the farm as being:

"A bleak place on the northern slope of the mountain; the situation remote and the soil very stony, so that it required an immense amount of labor to clear the land but my grandparents managed to live comfortably and happily there to a ripe old age and reared a large family of industrious boys. To me the old homestead was always a delightful place to visit while I remained in Maine, although grandfather always found plenty of work for me to do to keep me out of mischief, as he used to say."

After Daniel Verrill died in 1852 his son, Ichabod, who never married, continued to live on the farm for a while. It was afterward occupied by Henry Herrick, who died there. Finally the buildings were torn down, as the pine lumber of which they were built had become valuable for use elsewhere. When Prof. Verrill was last there, in 1915, the farm itself had been abandoned except that the hay and firewood were cut and the apples gathered.

Daniel Verrill and his wife, Eunice, had twelve children, namely:

1. Peter, born at Poland, Maine, March 2, 1801; died at Calais, Maine, October 10, 1853. He married twice, his first wife being Polly Yates of Greenwood, by whom he had one son, born 1823-24. In 1824 he went to St. Stevens, N. B., or to Calais, Me., and subsequently married Rebecca McLaughlin of St. Stevens, by whom he had at least eight children.
2. Cyrus, born in Minot, November 2, 1802; died at Minot, April 3, 1866. He married twice: (1) December 4, 1820, Olive Hutchins, born 1804; died August 27, 1840; by whom he had eleven children. She was a sister to Beulah, wife of Benjamin Verrill, brother of Cyrus. (2) 1841, Lucy B. Carter, nee Cole, born 1808; died at Augusta, Me., June 20, 1891. By his second wife, who was the widow of Stillman Carter of Paris, he had four children. Cyrus Verrill was a farmer and apparently lived all his life on his farm in Minot. Prof. Verrill states that he remembers his Uncle Cyrus as a middle aged, rather stout or stocky man of medium height, with light reddish or sandy hair, which some of his children inherited. One of his sons, Daniel, born about 1834, ran away to sea while a boy and is said to have served in the British navy during the Crimean War. Later he married and settled at Mahone, South Africa. Two other sons, Rufus R., born 1836 and Martin L., born 1838, were soldiers in the

Civil War. Rufus was in a Massachusetts regiment and died in the service. Martin was in Co. I, 29th Maine and after the war became a farmer at Auburn, married and had ten children. Prof. Verrill states that he and Daniel were playmates and that he also knew Rufus and Martin.

3. Benjamin, born in Minot or Poland, September 1, 1804; died in Minot, June 2, 1884. Married at Minot, August 16, 1831, Beulah Hutchins, born May 1, 1808; died in 1892. She was a sister of the first wife of his brother Cyrus. When young he lived in Greenwood, apparently with his father, from whom he learned housebuilding. He followed this trade while a young man and also taught school in Greenwood and elsewhere. In 1831 he married and moved to Minot. Later, between 1835 and 1839, he lived in Greenwood City where he kept a store in company with his brother George W., Prof. Verrill's father. The two brothers lived in a double house which they built themselves. It was located on the westerly side of the main street, nearest to the lake, and had a high, stone retaining wall on south and west sides of the lot. This house was burned with the rest of the village, May 9, 1862. About 1839 Benjamin again moved to Minot and became a farmer. Prof. Verrill says that he was an able and well educated man, an excellent school teacher, noted for his good penmanship, and that he held various public offices. He also says that when he first remembered his uncle he was a fine looking middle aged man of about average height, rather stout and strongly built, with very dark hair. Benjamin Verrill had five sons and five daughters. Two of the boys were soldiers in the Civil War and both died in the service. George Whitefield, his eldest son, born December 27, 1832, was a sergeant in Co. C, 7th Maine and was killed in action at Spotsylvania Court House, May 18, 1864. He married twice, the second time January 31, 1864, while on furlough, and left five or more children by his first wife, who died in 1860. His brother, Mark A., Benjamin's sixth son, born May 9, 1843, died in the service January 27, 1862, at Lewinsville, Va., but neither the cause of his death nor the organization in which he served are given in Prof. Verrill's records. Two of Benjamin's daughters were identical twins, named Lucyetta and Georgianna, after Prof. Verrill's mother and father.
4. Ichabod, born September 23, 1805; died at Auburn, October 19, 1870. He never married and always lived on the Patch Mountain farm with his father, except when he sometimes went away during the winter to work in lumber camps. He was a large, strong, thick

set man with very dark hair; addicted to hard work and fond of children. After his father's death in 1852 he continued to live on and run the farm for a while.

5. Daniel Cordwell, born March 9, 1809; died May 27, 1888, aged 79 years; married July 4, 1842, Sylvia W. Millikin of Waterford, Me. Until after the birth of his first child he lived with his father on the farm on Patch Mountain. Apparently in 1843 he moved to the Hayes farm and subsequently to Greenwood City where he conducted a grocery store and lived many years until the entire village was burned on May 9, 1862. His first store was on the easterly side of the street at its intersection with the road to West Paris. After 1853 he took over the store of his brother, Geo. W. Verrill, on the opposite corner. The destruction of every house in the village in 1862 was due to a high wind which caused the fire to spread very rapidly. He was helping his neighbors at the other end of the village when told that his own house and barn were on fire. He did not get back to his own place in time to save anything of value but his neighbors had saved his horse and wagon. After the fire he moved to Minot, near North Auburn, where he lived the rest of his life. At one time he also lived in Waterford for about three years but the dates are uncertain, probably it was between 1844 and 1853. Prof. Verrill describes him as being over six feet tall, rather spare (in this respect unlike most of his brothers), with light brown hair and gray eyes. For many years he was seriously lame from an injury to one of his knees and had to use crutches. In temperament he was enthusiastic and excitable, especially regarding politics and war news. In general, he took more interest in the world at large than most of his neighbors but he was not ambitious for political office. He had one son and three daughters. His son and oldest child, born November 19, 1842, he named William Henry Harrison after President Harrison, whom he greatly admired. Prof. Verrill says this son was 6 feet and 2 inches in height and greatly resembled his father in form and features.
6. George Washington, father of Prof. Verrill, was born in Minot, February 28, 1811; died at Norway, April 19, 1862; married Lucy H. Hilborn, May 7, 1834. She was born October 17, 1816; died November 14, 1861, and was a daughter of Seth B. Hilborn and granddaughter of Robert Hilborn, a veteran of the Revolutionary War. Geo. W. Verrill was a school teacher, carpenter, housebuilder, farmer and merchant. Was also captain of militia for a long while, selectman many times and held other local public offices. He was

prominent and active in all early temperance societies and movements and in all those opposed to slavery. He had eight children. For further details concerning him, his wife, and children see Part III.

7. Ira, born at Minot, February 8, 1813; died April 9, 1813, aged 2 months.
8. Theodore B., born at Minot, February 17, 1814; died at Bethel, May 4, 1889; married, December 4, 1844, Betsey J. Lyon, born in 1825 and died in Bethel, August 20, 1885. Before his marriage he worked with his brother, Geo. W. Verrill, on the latter's farm on Patch Mountain. At that time Theodore was a rather tall, slender man with sandy or reddish hair and a blond complexion. After his brother gave up farming in 1844, Theodore tried to carry on the farm alone but failed badly. He was unable to meet the payments due on the mortgage and the farm was sold, the loss falling heavily on his brother George, who had endorsed his notes. Theodore afterwards moved to Auburn and Bethel, where he and his wife died. He had three children, all of whom died unmarried and before they were twenty years old.
9. Justin, born at Minot, April 16, 1818; died at Greenwood, January 2, 1824, aged less than six years.
10. Elizabeth, born at Greenwood, December 10, 1819; died September 23, 1820, aged less than one year.
11. Harriet F., born in Greenwood, August 14, 1821; died July 23, 1882; married, December 26, 1848, Frederick Coburn, Jr., and moved to Prairie du Sac, Wis. She had red hair. They had one son.
12. Enoch Cordwell, born in Greenwood, December 21, 1882; married April 27, 1851, Clara J. Richardson of Rochester, N. H., born about 1828. When first married they lived in Greenwood, where their first child was born. Later he moved to West Auburn, where he lived the rest of his life. When a young man he learned the trades of carpentry and housebuilding from his brother, George W. Verrill, and apparently following those trades until after moving to Auburn, where he ran a sawmill on his own place. Prof. Verrill states that he was a musician, a man of about medium height, rather less than that of most of his brothers, a light blond with red hair and beard. He had five children, two of whom died young and unmarried.

PART III

GEORGE W. VERRILL AND HIS DESCENDANTS

GEORGE WASHINGTON VERRILL, father of Prof. A. E. Verrill, was the sixth son and also the sixth child of Daniel and Eunice (Cordwell) Verrill. For further details regarding his ancestry reference is made to Part II.

He was born in Minot, Maine February 28, 1811 and died at Norway, Maine, April 19, 1862. He and Lucy H. Hilborn were married May 7, 1834. Prior to his marriage he taught school for awhile, worked for about a year as a clerk in a store in Portland and went to Boston and learned the trade of ship carpenter, but did not follow it long and returned to Maine. He also learned house building, probably largely from his father, and whenever opportunity offered followed this line of work for a number of years, often associated with his father and brother Benjamin. Subsequently he taught this trade to his youngest brother, Enoch, who was about twelve years his junior.

The first house in which he and his wife lived was burned before they had occupied it a year. Nearly all their household effects were destroyed and as the fire occurred during very cold weather they suffered great hardships. After the fire they lived with his father, Daniel, for awhile and their first child, Byron D. Verrill, was born in his grandfather's house, February 2, 1835. Not long afterward they moved to Greenwood City where, between 1835 and 1839, George W. Verrill and his older brother, Benjamin, kept a store for a time and lived in a large double house which they built themselves. Later George W. bought the farm adjacent to that of his father, Daniel, and tore down the existing house to build a new one on the same site, which was that of a much older blockhouse of logs. It was originally built as a protection against Indian raids from Canada. After about 1817, it had been occupied as a dwelling by Francis Cordwell. Just when his father moved into the new house. A. E. Verrill did not know, but he was born there on February 9, 1839, and in his notes he says that he remembered seeing, when he was a very young child, his father doing carpenter work in the evenings and on rainy days to finish some of the rooms which were still unfinished.

After buying the farm and moving into the new house he devoted himself mainly to farming until 1844, when he was seriously injured by a load of hay tipping over onto him, injuring his back and producing a bad hernia. These injuries made it necessary for him to give up active physical work and hence he opened a store in North Norway and subsequently one in Greenwood City, which he continued to operate until some time in 1850. For over two years thereafter he kept a grocery store at Locke's Mills and in 1853 moved to Norway Village and opened a general store. This store was at first opposite the old Elm House and later was in the building which, in 1915, was Atherton's furniture store. He continued as a merchant, carrying on a successful general store in Norway until his death in 1862.

In this business he sold practically everything the farmers and villagers needed, such as provisions and household supplies of all kinds, cloth of various kinds, farm tools and implements, hardware, firearms, ammunition and gun flints. He also bought everything they produced or had to sell, not only the ordinary crops of potatoes, grain and apples but also meat, poultry, eggs, butter, cheese, honey, wool, firewood, lumber, furs and horses. Most of the things thus bought had to be shipped away to Portland or Boston to be disposed of and practically all goods on sale in the store had to be purchased in these cities. As Norway then had no rail connection, all goods had to be teamed to and from South Paris. The store was kept open for business every day, except Sundays, from 8 a.m. to at least 9 p.m. Therefore the farm products and other goods bought during the day had to be packed for shipment and hauled by team to South Paris early the next morning. Of course it would have been entirely beyond the ability of Grandfather Verrill, or any other one man, to attend to all these matters and carry on the business alone, but his three oldest sons, Byron, Addison and George W., Jr., aided him and did most of the heavy work, especially during his later years.

A hundred years ago almost everybody used intoxicating liquor, very frequently to excess. New England rum, the popular drink, was very cheap, two or three cents a glass or twenty-five to thirty cents a gallon, and formed part of the stock in trade of every country store. Grandfather Verrill, like all other store keepers, sold rum when he first began to run a store, but he never used either liquor or tobacco himself and very soon he gave up keeping liquor in his store. He did all he could to discourage its use and was an early member of the Washingtonians, Rechabites, Temperance Watchmen and Sons of Temperance, all strong temperance societies. He was also very strongly opposed to slavery, very active in all movements for its abolition and was a "conductor" on the "Underground Railway", which helped fugitive slaves to escape to Canada. In this activity he frequently made long night

drives, often in the dead of winter, carrying some negro to the next "Underground Station."

He held various local offices in the towns where he lived and was selectman in Greenwood for a number of years. From about 1842 to 1849 he was commanding officer of the Greenwood militia and was commonly called "Captain Verrill." "Training Day", when the militia were assembled for drill and training, was a general holiday, the farmers and their families coming from miles around. The uniforms worn by the militia were, from a modern point of view, decidedly conspicuous, or even gaudy. Their arms were all muzzle loading and mainly flint-locks. The men carried powder horns and bullet pouches and a certain amount of fixed ammunition consisting of a cylindrical roll of paper filled with powder, with the ball fast on one end of the roll and the other end tightly closed. These cartridges were carried stuck in holes bored in a block of wood, which was enclosed in a leather case. To use the cartridges the end of the paper roll opposite to the ball was bitten off, the powder poured into the muzzle of the gun and the ball and paper, the latter acting as a wad, rammed home. One of the old orders, preparatory to firing was, "Bite cartridges." Consequently men without good incisors were disqualified as soldiers.

Prof. Verrill describes his father as being about 5' 10" tall, rather stout, with dark hair and very blue eyes. He was smooth shaven except for a slight amount of beard on the sides of his face and under his chin. It is a family characteristic of the Verrills that their hair turns gray quite early, generally beginning to turn between 45 and 50 years of age, often earlier, but they retain an abundance of hair until very late in life.

According to Prof. Verrill, before his father was injured he was noted for his unusual strength. Father told of a number of men trying to see who could carry the heaviest load of sacks of grain on their shoulders. After they had all done their best, grandfather took the heaviest load of grain and then the man who had carried it climbed on top and grandfather walked off with both grain and man.

Accounts and stories regarding the old New England people often describe them as using very poor English and grammar and as employing many idioms and mispronunciations. Possibly a few of them did so but most of them, including our own ancestors, certainly did not. We have no definite record regarding the education of Daniel Verrill, son of Samuel, Jr., but his brother, Samuel III, was Town Clerk and Treasurer of Minot for 22 years and there is every reason to believe that Daniel, himself, all of his brothers and sisters and his own children were reasonably well educated. His son Benjamin, brother of George W., is known to have been an educated man, to have used good grammar and to have been an excellent penman. This is proven by

some of his notes on genealogy which I now have. George W. and his wife both had good school educations and their second daughter, Nellie, born in 1844, said that her parents were very careful to teach their children to speak and write correctly and that each evening the whole family read the Bible together, each person reading a chapter aloud. The children all had excellent educations, two of the sons becoming prominent lawyers and one a professor at Yale University.

It is true that in New England, as in other parts of the country, there were some local idioms and pronunciations which were quite generally used, such as "Injun" for Indian, which was the common pronunciation by nearly everybody when I, myself, was a boy. However, these peculiarities of speech were few and did not mark the general conversation as is often represented. As a boy and young man I frequently visited in Maine and well remember a great many old people in Norway, including both my maternal grandparents and my maternal great-grandmother, and the grammar and English they used were excellent, better than that used today by many people who claim a higher education.

Lucy H. Hilborn, wife of George W. Verrill, was born October 17, 1815, at Poland, Maine and died November 14, 1861, at Norway, Me. She was the third child of Seth Bearce and Betsy (Garland) Hilborn and was named for her paternal grandmother. She is said to have been a very pretty girl, with a fine figure, graceful carriage, gray eyes and dark auburn hair. Her daughter, Nellie, said that her mother was very fond of flowers and always had a pretty garden. This trait has been apparently inherited by many of her children and grandchildren. G. W. Verrill, Jr. writes of his mother: "In all business affairs and enterprises of her husband she was his confidant and shrewd advisor. She was beloved by every one who knew her." Her father, although quite well off financially, insisted that each of his daughters should learn a trade by which they could earn their living. Lucy, before her marriage to George W. Verrill learned the trade of tailoress and subsequently used this knowledge in making clothes for her husband and sons. Within a year after her marriage she contracted a very severe cold which developed into pneumonia,* the results of which seriously affected her health during the rest of her life and were thought to have hastened her death.

Lucy Hilborn's father, Seth B. Hilborn, the sixth child of Robert Hilborn II, and his wife Lucy, daughter of Joseph Riggs, was born at Hebron, Maine, December 25, 1788, married Betsy Garland at Poland, Maine, January 10, 1812, and died in Portland, June 6, 1878. Seth B. Hilborn and his wife had ten children, one son and nine daughters. He learned to be a mechanic

*Probably when their house was burned.

and millwright in the mill of his father-in-law, Richard Garland, at Poland. About 1828 he moved from there to Greenwood City, where there was good water power. At Greenwood he was quite successful in business and while living there he built a sawmill, a gristmill, a tavern or hotel and a good two-story house. The hotel was a large building for that time and place, well furnished within, with a broad veranda and a large stable. In 1840 he moved to Saco and about 1844 to Portland, where he opened a grocery store which he continued to operate until within a few years of his death. Prof. Verrill describes him as a tall, spare man with black hair, a strong nose, overhanging eyebrows and deeply set, piercing, black eyes. He was active until nearly the time of his death. Prof. Verrill said that his grandfather Hilborn was much interested in geology, minerals, plants and animal life, had a naturally observant and investigating mind and if he had been born fifty years later might well have become an able scientific man. When my father was about ten years old his grandfather took him for a walk on the seashore at Cape Elizabeth, near Portland, and told him the vernacular names of the starfishes, sea urchins, crabs, shells, etc. which they found. Apparently this was father's first lesson in marine zoology, a subject to which he subsequently devoted the greater part of his life. His grandfather was also much interested in apiculture, kept several hives of bees on the roof of his house in Portland and was very fond of "lining" wild bees to hollow trees and such places where they had stored their honey.

Betsy (Elizabeth), wife of Seth B. Hilborn, was the seventh child of Richard and Lydia (Waterhouse) Garland. She was born May 10, 1792, in Barrington, N. H., moved with her parents to Poland, Maine, in 1800 and died at Portland, August 27, 1865. Prof. Verrill says she was short, stout and had red hair but gives no further description of her. Her father, Richard Garland, was born in Barrington, N. H., March 11, 1754 and died November 30, 1834. He was one of the signers of the resolution of the Second Continental Congress, passed March 14, 1776, "to oppose the hostile proceedings of the British fleet", etc. The Garland family was prominent in the early history of New Hampshire and its members held many public offices.

Seth B. Hilborn's father, Robert Hilborn II, great-grandfather of Prof. Verrill, was born April 6, 1740, in Burlington, N. J., went to Portland, Maine, in 1775-'76 and died Jan. 8, 1834, at Minot. On May 12, 1777, he married Mrs. Lucy Chadbourne, widow of John Chadbourne and daughter of Joseph and Anna (Barber) Riggs. Robert Hilborn II, and his wife, Lucy, had eight children and she also had five by her first husband. At Portland, in May, 1776, Hilborn enlisted in the Continental Army and served eight months in an artillery company commanded by Capt. Abner Lowell of Portland, the company being part of a regiment commanded by Col. Jackson. Later he

again enlisted in the service of the State at Portland and served one year in an artillery company commanded by the same Capt. Lowell and stationed at Portland to guard the town. The foregoing record of his military service is taken directly from a photographic copy, of a declaration signed and sworn to by him at a Special District Court of the United States, held at Minot on August 14, 1832, before Hon. Ashur Ware, U. S. Judge for the District of Maine. This declaration was made to obtain the benefits provided by Act of Congress of June 7, 1832. In the declaration Robert Hilborn's age at that time is given as 92 years.

Robert Hilborn, II, was the son of Thomas Hilborn, a Quaker, who was born in Pennsylvania in 1716, died in 1766, and married, May 7, 1739, Mary Shreve, or Shreeve, at Newtown, Bucks County, Penn. One of her great-grandfathers was Diedric Areson of Long Island, who is believed to have been born in Holland or to have been of Dutch descent.*

Lucy, wife of Robert Hilborn, II, was born in Falmouth (Portland), Maine on March 5, 1751 and died in 1843. She first married, July 24, 1766. John Chadbourne, by whom she had five children. He died, date unknown, and in 1777 she married Hilborn. She was a descendant of Thomas Riggs of Gloucester, Mass., born 1632-'35, died in 1722. He was town clerk for 51 years, representative to the Massachusetts Legislature in 1700 and at other times and selectman for many years. His wife was Mary Millett, born in Gloucester, Mass., in 1639, died in 1695. Her father, Thomas Millett, was born in England in 1605, came to America in 1635 and was killed by Indians at Brookfield, Mass., in 1676. His father, Henry Millett, was an attorney-at-law in England.

George W. Verrill and his wife, Lucy (Hilborn), had eight children, viz:

1. Byron Decreny, born February 2, 1835; died December 14, 1898.
2. Araminta Maria, born December 28, 1836; died February 5, 1850.
3. Addison Emery, born February 9, 1839; died December 10, 1926.
4. George Washington, born May 2, 1841; died July 26, 1908.
5. Lucy Ellen, born September 10, 1844; died June 23, 1945.
6. Edgar Freeland, born January 4, 1850; died January 1, 1926.
7. Lydia Emma, born November 18, 1853; died January 18, 1918.
8. Harriet Louise, born August 5, 1856; died August 22, 1945.

*It is rather remarkable that, so far as we have been able to find out, most of my own ancestors, both paternal and maternal, came from England. Diedric Areson, from Holland, John Moses from Scotland and one of my mother's ancestors, Alexander Gordon, also from Scotland are the exceptions. Most of them were among the very early settlers of New England, in the first half of the 17th century. The first Verrill (Samuel) was the family's latest Old World immigrant, in the early part of the 18th century.

Byron Decreny was born in the farmhouse of his grandfather, Daniel Verrill, on Patch Mountain, in Greenwood, Maine, and died in Portland as the result of a bad fall while deer hunting. He married Harriet Augusta Robinson of Wiscasset, Maine, June 5, 1866. He was named after Philip Anthony Byron Decreny of Portland, who was his father's most intimate friend while working there a short time before his marriage. Byron Verrill was educated in the district schools, at academies and by private tutors. As a boy and young man he assisted his father in the store at Norway, taught district schools at Shelburne, N. H. and Oxford and North Norway, Maine, and was finally, 1856-1859, principal of the Norway Liberal Institute at Norway Village. This Institute apparently compared very favorably with the modern high schools and Byron Verrill was very successful as its principal. My own father and mother both studied under him and both were well grounded in English, Latin, French, mathematics and other subjects which they learned there. Later he read law at Portland and Wiscasset and was admitted to the bar in Lincoln County, Maine, April 24, 1862. He began to practice law in Norway and moved to Portland in 1862 and lived there the rest of his life. As an attorney he was very successful and greatly respected. In later years his practice was confined almost entirely to civil cases and he frequently acted very efficiently as receiver for concerns in financial difficulties. He was also at one time on the bench and for a while he and Thomas B. Reed, Representative to Congress 1876-1899 and Speaker of the House several times, were partners in a law office.

I remember Uncle Byron very well as a tall rather spare man with dark hair and a full brown beard, which he wore quite long. To me he seemed dignified and rather sedate but very friendly and pleasant. He was very fond of sports and games, particularly of trout and salmon fishing, hunting, games of cards and croquet. I recall that he used to play the latter in the evening with a candle in a socket on top of each wicket.

His wife, who was usually called "Hattie Byron" to distinguish her from her husband's youngest sister, was quite different from him, being short, stout and always smiling and jolly.

Byron D. Verrill and his wife Harriet had four children, viz:

1. Harry Mighels, born January 4, 1868, at Portland; graduated from Yale University, Ph.B. 1889 and L.L.B. in 1891; practised law, first with his father and afterwards as senior member of the legal firm of Verrill, Hale, Booth & Ives, later Verrill, Hale, Dana & Walker. Resides in Portland and has summer home at Lake Sebago; married October 30, 1895, Louis Shurtleff Brown of Portland. Six children, viz: Robinson, born August 22, 1896; Richard Mighels, born September 28, 1898; Alice Louise, born August 9, 1900, died September 10, 1901; Louise, born September 24, 1902; John, born September 13, 1904, died October 11, 1933; Harry, born March 13, 1909, died February 5, 1921.

2. Alice Gertrude, born August 29, 1871, at Portland; married June 5, 1902, Sterling T. Dow at Portland. Three children viz: Sterling, born November 19, 1903; Harriet, born July 22, 1906, at Portland; Elizabeth, born January 2, 1911, at Kennebunk, Maine.
3. Marion, born June 2, 1875; married October 17, 1911, at Portland, Ernest Noble, an attorney, who died January 3, 1938. She now resides in Cambridge, Mass. One child, Ruth, born September 12, 1913.
4. Byron Robinson, born and died in 1884.

Araminta Maria, the second child of grandfather Verrill, was born on Patch Mountain. Later they lived for a while in Greenwood City and while there Araminta died from pneumonia. In his various notes father frequently speaks of this sister. She was only two years older than he and they were evidently close companions and playmates. In one note he says she had red hair but says nothing else regarding her appearance.

Addison Emery was the second son and third child of his parents. For account of his life and work see Part IV, hereof, and for recollections of his early life see part V, written by himself.

George W., Jr., third son and fourth child, was born in his father's farm house on Patch Mountain, in Greenwood, and died in Portland. He was educated in the district schools and the Norway Liberal Institute. Early in 1862 he began to read law in the office of his brother Byron, who was then practicing law in Norway. When President Lincoln issued his call, July 2, 1862, for 300,000 men for three years service in the Civil War, he dropped his legal education and, July 14, 1862, enlisted in the 17th Main Infantry and on August 18, 1862, with that regiment was mustered into the service of the United States as 1st sergeant of Company C. On March 2, 1863, he was promoted to 2nd lieutenant and on November 10, 1863, to 1st lieutenant of that company and to captain of Company E, on March 14, 1864. During the 1864 campaign he acted as regimental adjutant and after February 3, 1865, he was detached from his company and served on the brigade staff as assistant adjutant general and inspector-general, aide-de-camp on the staff of Brig. Gen. B. R. Pierce and on a board to examine officers. He, and the regiment, were first under fire on December 13, 1862, at the battle of Frederickburg, where they lost 3 men killed and 17 wounded. Thereafter, until May, 1863, they took part in no engagements but lost many men from disease and by discharge for various reasons. Early in May, 1863, they took part in the battles of The Cedars and Chancellorsville, where their total casualties were 111.

On June 11, 1863, the regiment, which formed part of the 3rd Brigade, 1st Division, 3rd Corps of the Army of the Potomac began a northerly march of over 200 miles to Gettysburg. On June 25th they made their longest march,

30 miles, and at 10 a.m. on July 2nd they reached the battlefield at Gettysburg, having started at 4:30 a.m. and marched 13 miles that day. Early that afternoon the regiment was placed south of the Peach Orchard, in support of the brigade skirmish line. About 4:10 p.m. it was shifted to the southerly corner of the Wheatfield where it was hotly engaged until 6 p.m. when, both flanks being exposed by the withdrawal of other troops, it was ordered back about 400 yards to a position along the road at the rear of the Wheatfield. Shortly afterwards, in a counter attack led in person by Gen. D. B. Birney, commanding the division, it regained much of the lost ground. Later it was relieved by other Union troops after having been steadily and hotly engaged for 2½ hours and having expended all ammunition. The regiment entered the battle with 23 officers and 350 enlisted men and on July 2nd suffered 120 casualties of whom 38 were killed or mortally wounded. G. W. Verrill was second in command of Company C, there being only two commissioned officers present for duty, a 1st lieutenant and himself. During the battle on July 2nd he was wounded in the thigh by a rifle bullet which he carried, encysted in his leg, the rest of his life. While recovering from his wound he went home to Norway for a short time but was only off duty for three months and rejoined his regiment on October 3. He continued on active service until the close of the war, being mustered out of Federal service with the rest of the regiment on June 4, 1865, and disbanded by the State six days later. During his service he took part in 8 large battle and about 20 less important engagements.

After the war he resumed his legal studies in his brother's office, then located in Portland, and was admitted to the Cumberland Bar February 20, 1867 and thereafter practiced law in Portland. For about ten years (1886-'97) he devoted a large amount of time to work connected with the design and placing of monuments showing the position of the Maine troops at the battle of Gettysburg and the preparation of a report of which he was assistant editor, entitled "Maine at Gettysburg." For this report he personally prepared the four colored plates showing the positions of the Union and Confederate armies on the three days of the battle and the cavalry engagement on July 3, and also two diagrams showing the positions on July 2 of the opposing troops in and near the Wheatfield. To this report he contributed the historical sketch of the 17th Maine Infantry and an article on the "Soldiers' National Cemetery at Gettysburg" with a list of the known Maine men who are buried there. He was the authority for the account of the participation of the 17th Maine in the battle of Gettysburg and was the author of that portion of the account relating to the battle in the Wheatfield. At the dedication of the 17th Maine monument at Gettysburg on October 3, 1889, he read a poem

which he had written, entitled "The 17th Maine in the Wheatfield." He also contributed largely to the volume "Maine in the Civil War."

He spent a large amount of time and considerable money in collecting data regarding the family history and genealogy. Apparently he became interested in this subject about 1860, as a result of data collected by and conversations with his uncle, Benjamin Verrill (1804-'84) who had been interested in the family history for many years, apparently from about 1830-'50. So far as is known, Benjamin Verrill was the first member of the family to take any particular interest in the family history and the data he had collected and his personal knowledge of family matters were the beginning of the work subsequently done by Uncle Wash and my father. They worked together and accumulated a very large amount of information pertaining, not only to their own branch of the family, but to many other more or less closely related branches. It was their intention to make and publish as complete a record as possible of all of the descendants of Samuel Verrill I, who emigrated from England. This proved to be a great task, for in the early days, vital records were few and often incomplete or misleading and the family has been a prolific one. Samuel Verrill II, his father's only child, had 11 children, most of whom grew up and raised large families, 10 to 15 children. The next generation was equally, or more, prolific, one of the daughters of Samuel Verrill III, Nancy, who married Charles Millett, having 18 children, 15 in school at the same time, according to her own statement.

Before their work was completed Uncle Wash died and his charts and other data were sent to my father, who continued the work and when he died he had it nearly ready for publication. Why I have not attempted to complete and publish all the data collected by them and why I have confined the scope of this paper to the forebears and descendants of George W. Verrill is explained in the Foreword.

On April 4, 1867, he married Augusta Beckett, daughter of S. B. Beckett of Portland. She died in Portland on July 22, 1911. They had three children, all born in Portland, viz:

Grace Louise, b. January 15, 1869; d. February 2, 1888.

Cora, b. January 17, 1871; d. August 20, 1944, at New London, Conn.; married June 26, 1895 at Portland, Louis Augustus Round, b. September 20, 1862, at Dover, N. J., son of William Filley Round; d. April 15, 1943. Graduated in naval architecture in 1889 from Lehigh University; employed as naval architect. Four children, viz:

1. George Verrill, b. April 14, 1896, at Bath, Me.; graduated E. E. Syracuse University, 1921; employed as electrical engineer. Married April 20, 1929, at Lynn, Doris Murray, b. April 9, 1900, at Lynn. Two children, viz:

a. Merriam Lorna, b. August 22, 1933, at Lynn.

b. Judith Caroline, b. January 20, 1939.

2. Harold Ford, b. July 10, 1898, at Bath, Me.; graduated B.S. in Forestry, Syracuse University, 1919; employed as forester. Married November 24, 1927, at New York City, Claribel Fabrique Cole, b. January 23, 1899, at Pawling, N. Y. No children.
3. Louis Augustus Round Jr., b. May 1, 1902, at Quincy, Mass.; graduated from New York State Nautical School in 1922, d. June 24, 1943. Married April 14, 1930, at Westerly, R. I., Elizabeth Brooks, b. August 28, 1903, at Charleston, S. C. Two children, both born in New London, viz:
 - a. Ann Verrill, b. January 5, 1932.
 - b. Louisa, b. April 12, 1942.
4. Kenneth Stetson, b. June 14, 1910; d. July 4, 1910, at Quincy.

George Beckett, b. February 19, 1875 in Portland. Educated in the Portland schools and at Bowdoin College. Married November 27, 1897, Hattie M. Spollett (previously Mrs. Hattie M. Woodside) b. March 25, 1866 at Brunswick, Me., daughter of Augustus F. and Georgianna (Hubbard) Spollett. Three children, viz: Kathryn Beckett, b. January 9, 1900, married September 30, 1922, Earl E. Davis, d. January 21, 1923; Marion Augusta, b. December 21, 1901; George Walter, b. April 19, 1909.

Lucy Ellen ("Aunt Nellie"), her parents' second daughter and fifth child, was born September 10, 1844, in her father's house on Patch Mountain in Greenwood. She was educated in the district schools and the Norway High School, formerly the Norway Liberal Institute. She married (1st) August 20, 1866, Henry Rust Mighels, who died May 28, 1879, at Carson City, Nev. and (2nd) July 4, 1880, Samuel P. Davis, who died March 17, 1918.

Her first husband was born November 3, 1830, in Norway, Me., son of Dr. Jesse Wedgewood Mighels and his wife, Evelina A., daughter of Capt. Henry Rust, Jr., of Norway. Dr. Mighels, while an infant, was left an orphan and was brought up by the town of Parsonfield, Me., and served as an apprentice until he was 18 years old. By his intelligence, energy and self denial he acquired a good education, graduated from Dartmouth College* in 1823 with the degree of M.D. and studied medicine with Dr. James Bradley of Parsonfield. About 1832 he moved to Portland, Maine, and in 1847 to Cincinnati where he practised as a physician for a number of years. Subsequently he returned to Maine and settled in Norway, where he died. After his death his widow went to live with her daughter-in-law in Carson City, Nev., where she died. In addition to being a physician, Dr. Mighels was the pioneer conchologist of Maine and while living in Portland made a valuable collection of shells, which was destroyed in the Portland fire. About 1840-43 he published in the Journal of the Boston Soc. Nat. Hist. several illustrated articles describing new and rare native shells.

*In the College records the name is spelled "Mighills" but subsequently the doctor himself wrote it "Mighels." In the East it was pronounced "Miles" but in California and Nevada the pronunciation is "My-gils."

Henry Rust Mighels was usually called "Harry" but for at least four generations, 1737-1831, the first son in the Rust family was named Henry and Dr. Mighels and his wife, daughter of Henry Rust, Jr., followed the family custom by naming their son Henry Rust Mighels. When he was two years old his parents moved to Portland, where he received a good education, and in 1847 to Cincinnati, where he studied medicine under his father for a year and also associated with some artists and learned something about oil painting. In 1850 he started for California, via New Orleans and Nicaragua. During that winter and the spring of 1851 he ran a hotel in Nicaragua and then went to Panama, where he was ill with the fever for a couple of months. He then sailed for San Francisco as assistant store-keeper on the steamer "Panama." For the next five years he worked as a sign and decorative painter in various places in California. In 1856 he took up newspaper work, first as assistant editor of the "Butte Record" of Oroville, Calif., then as local editor of the "Sacramento Bee" and when the "Marysville Appeal" was established in 1860 he became its first editor. In that year he also made a visit to his parents in Norway, Maine and while there became acquainted with Lucy Ellen (Nellie) Verrill. When the Civil War started he was a strong Unionist, so eager to join the army that he went to Washington to offer his services, and in April, 1862, was commissioned by President Lincoln as Assistant Adjutant-General with the rank of captain and assigned to duty on the staff of Gen. S. D. Sturgis, then stationed at Fort Leavenworth, Kan. Later Gen. Sturgis was placed in command of the 2nd Division of the Ninth (Burnside's) Corps and Capt. Mighels served his entire time in the army as a staff officer in that corps. He took part in seventeen battles, including Antietam, first battle of Fredericksburg, siege of Vicksburg, siege of Jackson, Battle of the Wilderness (1864), Spottsylvania, etc. and was finally, June 18, 1864, shot through both thighs during the Petersburg campaign. He was sent to the hospital at Annapolis, where he nearly died from gangrene but recovered after being transferred to the Baltimore hospital and was honorably discharged from the army in November, 1864, because of physical disability resulting from his wounds.

When visiting his parents in Norway he became engaged to Nellie Verrill. Capt. Mighels returned to California in April, 1865, and soon afterwards became the editor and part owner of the "Carson Appeal." Later he was the sole owner, as well as editor, of that paper up to the time of his death. From 1866 to 1878, inclusive, he took a prominent part in the leadership of the Republican party in Nevada. In 1868 he was made State Printer and in 1876 was elected to the Assembly and was made Speaker of the House by acclamation. In 1878 he was the Republican candidate for Lieutenant-Governor but was defeated. He was a man of great ability and intellect, a

prolific writer and an influential public speaker. The last work he did, undertaken for the benefit of his family after his physician had told him he had but a short time to live, was the preparation of a volume entitled "Sage Brush Leaves." This book, mainly a compilation of short essays, letters and notes originally written by him for his paper, was dedicated to his wife only six weeks before he died. Its actual publication was by his wife. In addition to his literary work he also had much ability as an artist and left a number of paintings and sketches which indicate that he might have been very successful in that line had he chosen to follow it.

After the death of her father in 1862, Nellie lived in Portland for about four years. On July 10, 1866, accompanied by a friend of Capt. Mighels, she started for California. They sailed from New York on the old side-wheel steamer "Constitution", crowded with 400 passengers, and reached Aspinwall (now Colon) in nine days. They were transferred across the Isthmus to Panama City on the old narrow-gauge railroad and by small craft out to the steamer, there being no pier where a large vessel could berth, reaching San Francisco 28 days after leaving New York. In San Francisco she stayed with some friends for a short time. On August 20, 1866, she and Capt. Mighels were married. They went to Sacramento by boat, there being no railroad then, and thence by stage to Carson. They were driven by Hank Monk, the famous western stage driver. Between Hangtown (Placerville) and Carson the six-horse mail coach, carrying thirteen passengers, was driven as fast as possible, ten miles per hour part of the time, the horses being changed every ten miles. The trip from Placerville to Carson, which has since been her home, took about 24 hours. In 1866, when she went to Carson to live, the town was very different from those to which she had been accustomed in New England. In place of the quiet streets, shaded by large elms, maples and other trees, there were few trees and less quiet. Along the main street many of the buildings were saloons and gambling halls. Drinking and gambling were the chief amusements. Many of the men were miners, cattlemen or adventurers, most of them went armed and shooting affrays were common. Yet a respectable woman was fully as safe as in a New England village. She frequently helped her husband on the paper, setting type, reading proof, etc. and sometimes went home alone late in the evening, when the saloons and gambling halls were full of rough men but I have heard her say that she never had the slightest disrespectful word or action offered her.

About 1870 her youngest sister, Harriet, who had been living with her brother Addison's family, also went to Carson, probably with her brother Edgar, and made her home with her sister until her own marriage in 1881. In 1876 the two sisters went back east to visit their brothers and their

families and to attend the Centennial Exhibition at Philadelphia. When they returned, their sister Emma went with them and lived with Nellie for about three years, until she was married in 1879.

Mrs. Mighels was the first woman on the Pacific Coast, perhaps in the United States, to report legislative proceedings for newspapers. In 1877 she reported the proceedings of the Nevada Legislature, exchanging her notes with the reporter for the "Virginia City Enterprise", a morning paper like the "Carson Appeal", so that full reports were published by both papers. When the 1879 session began, the editor of the "Enterprise" engaged her to act as reporter for that paper on a salary basis and during the 60-day session she covered the proceedings for both the "Appeal" and "Enterprise." In those days much importance was attached to oratory, long speeches were common and were often reported in full and published in the papers. At the close of the 1879 session, Senator Gibson of Virginia City, acting on behalf of the Legislature, presented her with \$100.00 in gold "Just as an appreciation of the fine work you have done for us." She was trained by her husband to make such reports, in long hand, by going to church each Sunday and reporting the sermons in full. Subsequently they were often published in the "Appeal", to the delight of the ministers.

Her second husband, Samuel P. Davis, son of Rev. George R. Davis, an Episcopal clergyman, and Sylvia (Nichols) Davis, was born April 3, 1850, in Branford, Conn. When 15 years old he entered Racine College, Wis., which he attended for three years. For a time he lived with his parents in Brownville, Neb. Later he took up newspaper work and was connected with a dozen or more papers, among them being the "Omaha Herald", "St. Louis Republican", "Chicago Times", "Vallejo Independent", "San Francisco Chronicle", "Marysville Appeal" and "Evening Chronicle" (Virginia City, Nev.). In November, 1879, he became connected with the "Carson City Appeal", a connection which lasted as long as he lived. Sam Davis was not only a successful newspaper man but was also the author of a number of excellent poems and many short stories. Some of these poems and stories he published in a volume under the title "Short Stories by Sam Davis." He was also the editor of a history of Nevada, published in 1913. His ability as a story teller and his apparently inexhaustible supply of stories made him a welcome addition to any gathering and, unlike most story tellers, was never known to tell the same story twice. In addition to his literary ability and work, he took much interest in politics and was elected State Comptroller and Insurance Commissioner for two terms, January 1, 1899-December 31, 1906. He was also Deputy Secretary of State, 1895-1899. His circle of acquaintances and friends was large and included many prominent theatrical people and politicians, as well as newspaper men and other writers. In appearance, Sam

Davis was of medium height, stocky, and had an abundance of dark brown hair.

By her first husband, Nellie had five children, all born in Carson, viz:

1. Henry Rust Mighels, Jr., born Oct. 9, 1867, died November 11, 1932. He was mainly engaged in newspaper work and at different times was editor of the "Fallon Standard", the "Ely Times", and several times of the "Carson City Appeal", which he was editing at the time of his death. He married, November 21, 1892, Ida Bryant, who was born November 21, 1871, at Empire, Nev. and died Dec. 3, 1942. Her father, Albert S. Bryant, was born in Maine, moved to Nevada and became one of the early and prominent lumber men of that state. They had two children, Bernice Ellen, born April 3, 1894 and Henry Rust Mighels III, born August 25, 1900. Bernice married, November 15, 1916, McRay McDonald and they have two sons, George Charles, born September 20, 1917 and Donald Ray, born January 12, 1919. Both sons married, George on January 12, 1941, and Donald on July 14, 1942. George has one son, Charles George, born April 13, 1943. Henry Rust Mighels III married (1) Iva Hutchison on September 1, 1923, by whom he had one child, Mylie Margaret, born December 1, 1924. Married (2) August 31, 1941 Barbara (Horton) Hutchison, no children.
2. Philip Verrill Mighels, born April 19, 1869, died October 12, 1911, his death being caused by the accidental discharge of his gun while quail hunting during a visit to Nevada. He married (1) Ella Cummins, in 1896. from whom he was divorced; (2) Frances Weaver, in 1910. No children by either marriage. He read law and was admitted to the bar in Nevada but never practised as an attorney and devoted himself to writing, being the author of some poetry, also many magazine articles. He lived in London, England, for about four years, then in New York.
3. Bessie Mighels, born January 2, 1871, died March 19, 1920. She married September 24, 1900, Irwin G. Lewis, a newspaper man. They had only one child, a daughter, Verrill, born March 8, 1907, died April 13, 1941.
4. Roy Robinson Mighels, born November 24, 1873, married November 26, 1896, Minerva Ellen Swisher. No children. He followed newspaper work and mining.
5. Nellie Mighels, born August 20, 1879, died September 10, 1879.

By her second husband, Sam Davis, she had two daughters both born in Carson, viz:

1. Lucy Sylvia, born March 1, 1881, married January 17, 1907 Raymond B. Crowell, later divorced. She has always lived in Carson and is secretary to a judge of the Supreme Court of Nevada. She has two children, (1) Royal Davis Crowell, born November 15, 1907, married May 23, 1936, Ina Johnson of Reno. They have two children, Royal Davis Crowell, Jr., born April 13, 1937, and Judith, born January 15, 1946. (2) Sylvia Crowell, born March 7, 1909, married October 25, 1936, Frederick John Blackburn, later divorced, no children. She served in the Women's Army Corps during World War II.
2. Ethel Harriet, born December 22, 1886, married (1) August 12, 1913, Robert H. Roy who died June 1, 1923, leaving one child, Ethel, born January 24, 1917, married December 25, 1935, Jack Elliott, later divorced. Ethel H. married (2) September 15, 1928, Frank Wait. No children.

Edgar Freeland Verrill, sixth child of George W. and his wife, Lucy (Hilborn) Verrill, was born in Greenwood, Me., January 4, 1850, died January 1, 1926 in San Francisco, married, 1873, Sarah Ellen Russell of Portland, Me., born September 3, 1849, died February 3, 1925. Their only child, Florence Irene, was born October 15, 1875, in Virginia City, Nev., married in San Francisco March 12, 1900, Harry Hood Huber, born July 12, 1877, at Knoxville, Penn. They had four sons, viz:

1. Leslie Verrill, born in San Francisco, April 25, 1901.
2. Edgar Alston, born in San Francisco, July 20, 1905, died November 16, 1920.
3. Melvin Temple, born in Burlingame, March 29, 1908.
4. Eldridge Hood, born in Alameda, October 27, 1917.

Edgar F. Verrill was (1869-70) a special student in Sheffield Scientific School, Yale University. He then took up railroad work, first with the Grand Trunk R. R. in Maine, then with the Virginia & Truckee Ry. Co. in Nevada, where he was a train conductor for several years and resided in Virginia City, Nevada. Later he was agent for Wells, Fargo & Co. and then for the American Railway Express Co. His last position was that of freight agent of the Southern Pacific Co. in San Francisco. He retired from active business about five years before his death. After leaving Nevada he lived first in San Francisco and later, for about a dozen years, in Burlingame, Calif. In general appearance he resembled his brother Addison but his hair was red not brown like that of his brother.

Lydia Emma, seventh child of George W. and Lucy Verrill, was born November 18, 1853, in Norway and died at Santa Rosa, Calif., January 18, 1918. After the death of her parents in 1861 and 1862, she and her younger sister, Harriet, lived in Norway with Mrs. Elliot Smith, my grandmother, and with other friends, but after her brother Byron was married in 1866, she made her home with him in Portland. She was educated in the district schools and the Portland High School, from which she graduated in 1872 and became a school teacher. In 1876 she accompanied her sister Nellie when the latter returned to Carson City after a visit in the east and for about three years she lived with her and taught school in Nevada. On November 18, 1879 at Carson City, she married Jonathan Doane, son of George W. Doane of Philadelphia and Christina (Newkirk) Doane, born May 30, 1844, died September 3, 1918.

Mr. Doane's early life was spent on his father's farm near Philadelphia. Later he joined his older brother, Harry, in Carson City and was employed there in the U. S. Mint when he was married. After several years in the mint he took up newspaper work on the "Carson Appeal" and then on a paper in Santa Monica, Calif., where he lived with his family for about a year. He then returned to Carson and for four years was Assistant Deputy

Secretary of State and thereafter for sixteen years was Deputy State Comptroller of Nevada. His later years were spent with his wife on a ranch which he purchased near Santa Rosa, Calif. Both he and his wife were devout members of the Presbyterian Church, in which he held various offices. His disposition was particularly amiable and gentle and he was devoted to his family. He and his wife had four children, all born in Carson City, viz:

1. George Verrill, born December 10, 1880; died January 21, 1883.
2. Amy Christina, born March 16, 1884; graduated from Carson High School 1902 and from Normal Dept. of Univ. of Nevada 1905. Thereafter taught schools in Nevada and California until she married, June 3, 1912, George E. Verrill, son of Addison E. and Flora L. Verrill. (See Part IV, p. 144).
3. Arthur Verrill, born March 31, 1886; took regular course in civil engineering and graduated from Univ. of Nevada in 1908 with degree of B.S. in C.E.; practised his profession in Nevada, died September 15, 1915 in San Francisco; married August 12, 1914, Maren Kirsten Jensen, born December 25, 1886, graduated from Normal Dept., Univ. of Nevada, 1909. One son, John Arthur, born June 13, 1915; took two years of civil engineering course at Univ. of Nevada, served in the Navy during World War II. Married November 9, 1946, Verna Park, born March 12, 1919.
4. Grace, born May 11, 1888; married (1) June 26, 1907, LeRoy Skinner, born October 29, 1881, at Beatrice, Neb., son of Charles Skinner and Margaret Armstrong; served for a time in Navy; died August 4, 1923. Two sons by this marriage, both born in Carson City, Nev. (1) Clare LeRoy, born March 29, 1908; married December 25, 1930, Elizabeth Johnson, born June 23, 1903, at Buffalo, N. Y. (2) John Doane, born January 17, 1913; married (1) March 6, 1942, at Carson City, Mary Jane Martin, born April 29, 1915, at Seattle, Wash. No children. Divorced. (2) February 15, 1947, Ruth Schofield, born September 15, 1923. Served for a time in the Navy and the Merchant Marine. Grace entered the service of the Western Pacific R. R. Co., where she worked until she retired. She married (2) August 17, 1931, Louis H. Adler, born August 23, 1888, in Bremen, Germany, died May 11, 1948. No children by second marriage.

Harriet Louise, her parents eighth and youngest child, was born August 5, 1856, in Norway, Maine. After the death of her parents, she and her next older sister Emma, remained in Norway for a few years. After my parents were married in 1865, she made her home with them in New Haven, Conn., until about 1869-70, when she went to Carson City, Nev., to live with her sister, Mrs. H. R. Mighels. When about 19 years old she obtained a position in the U. S. Mint in Carson and continued to work there for about six years. On October 22, 1881, she married George McLoughlin, whose parents, Joseph and Margaret (Rutherford) McLoughlin came from the north of Ireland and Scotland. George was born in Ireland, April 9, 1848, and brought to America while a baby.

In his early manhood, he went to Carson City and found employment there as a pressman in the mint. He continued to work there until in 1898,

he was transferred to the Philadelphia mint, where he had charge of all the machinery and mechanical operations, supervised the transfer of the mechanical plant to a new building and its installation therein and substituted electricity for steam motive power. While thus employed, he and his family lived in Wyncote, a suburb of Philadelphia. In 1902 he was transferred to the San Francisco mint as Superintendent of Machinery and to make the same changes in the plant of that mint that he did so satisfactorily in the one in Philadelphia. He continued to hold his position in the San Francisco mint until he was retired on a pension only a few months before his death on October 28, 1920. When he was transferred to the San Francisco mint the family moved to that city and lived there until 1915 when he bought a home in Piedmont, Calif.

George McLoughlin was very expert with all kinds of machinery and mechanical appliances. All of the mints adopted and are believed to be still using a number of his inventions, such as water-cooled rolls, the double punch, etc. During the great San Francisco fire, resulting from the earthquake of 1906, McLoughlin personally saved the mint from destruction. The city water supply had been cut off by the earthquake and he was the only one at the mint who remembered the location of an old well behind the mint which might be utilized. He devised means of obtaining water from this well with hand-operated pumps and with a crew of about 18 men began a fight to save the mint. One by one the men quit, because of the intense heat and great danger, until only he and two other men remained. The mint was then nearly surrounded by fire and was in great danger of being destroyed. The Superintendent of the Mint and the officer in command of the troops ordered McLoughlin to give up the fight and leave the building but he refused to do so and stayed on the roof, fighting the new fires constantly starting, until all danger was passed and the mint was saved. He was subsequently highly commended by the Federal officials for his bravery and ability and received an increase in salary. George McLoughlin and his wife had five children, all born in Carson City, Nevada, viz:

1. George Verrill, born February 15, 1883, twin with Nellie L.; graduated D.D.S. 1904 from Univ. of Calif. and began the practice of dentistry in San Francisco. Married September 22, 1924, Mildred de Motte Wilbur, born July 7, 1890, daughter of Dr. Charles F. Wilbur of Philadelphia. No children.
2. Nellie Lee, born February 15, 1883, twin with George V. She has never married.
3. Ralph Hilborn, born May 5, 1885; graduated as a mining engineer from the Univ. of Calif. and practiced his profession in Canada, Nevada and Calif. In 1932 he went to Luzon, P. I. in connection with gold mining operations. On January 6, 1942, he and his wife were interned by the Japanese in Santo Tomas camp in Manila, where they remained until liberated by the American troops in 1945, and later were sent back to this country. Married (1) September 18, 1916, Clementine

Margaret Brown, born on January 21, 1895, died November 30, 1918; one child, Ralph Hilborn, Jr., born August 10, 1917, who, after his mother's death, made his home with his grandmother and aunt. Married November 8, 1940 Winifred Wilson, daughter of Nils Wilson of Berkeley, Calif.; two children, Ralph H., III, born September 20, 1942, and Alan Verrill, born February 3, 1944. Ralph H., Sr., married (2) October 1, 1936, in British Columbia, Rosemary June McGuire, born June 26, 1915, who returned with him to Luzon and later shared with him the privations of an internment camp and whose health was seriously impaired thereby. No children.

4. Maurice Evans, born January 7, 1890, became at one time World Tennis Champion. He first began to play in 1904, in the Golden Gate Park grounds in San Francisco. In 1905 under guidance of Sidney Marvin, he began to play in tournaments and during the next four years won all the western matches. In 1909 he was sent to Australia on the Davis Cup team and also went to New Zealand. From 1909-1915 he took part in all the eastern tournaments, winning the National Singles in 1912 and 1913 and the National Doubles, with Thomas Bundy, in 1912-1914. In 1913, in England, he won the Wimbledon Trophy in the All Comers Championship, giving him the World's Championship. The greatest game he ever played was in Forest Hills in 1914, when he won the Davis Cup match against Norman Brooks, the great Australian player. During World War I he joined the Navy and served. He married, May 28, 1918, Helen Mears, born November 24, 1894, daughter of Charles Mears of Pasadena, Calif. Three children. (1) Maurice E., Jr., born July 7, 1919, (2) Jean, born April 17, 1922, married April 16, 1944, Capt. Edmund B. Bigelow, U. S. Air Force. (3) Doris Mears, born July 21, 1928.
5. Doris, born March 7, 1894, married October 9, 1920, Osgood Murdock, born October 9, 1892, graduated Univ. of Calif., 1916, and took up journalism. Owner and publisher of "The Implement Record", a trade journal. No children.

PART IV

ADDISON EMERY VERRILL, HIS LIFE AND WORK

ADDISON Emery Verrill, second son and third child of George W. and Lucy (Hilborn) Verrill, was born February 9, 1839, in Greenwood, Me., and died December 10, 1926, in Santa Barbara, California. His early education was obtained in the district schools. He prepared for college at the Norway Liberal Institute and by a large amount of private study, helped by a few books, by studying minerals, plants, birds, mammals and some invertebrates which he, himself, collected and by laboratory experiments in chemistry and physics. His attendance at the Institute was not continuous as at least one of the sons was constantly needed to help their father in his business and hence the three oldest brothers had to take turns in going to school. The Institute must have been an excellent school as my father was a good Latin and Greek scholar, read French and German readily and was well grounded in geometry, algebra and trigonometry. Some of these subjects he may have studied by himself, as he did chemistry, physics and natural history, but it is probable that most of his knowledge of languages and mathematics was acquired at the Institute.*

Early in May, 1859, at the age of little more than twenty, he entered Lawrence Scientific School of Harvard University, with advanced standing. When he took the oral entrance examinations in zoology and botany, Prof. Louis Agassiz told him that he already knew more about these subjects than most of the seniors did when they graduated. On July 7, 1862, he passed his final examinations and graduated from Harvard with the degree of B.S.

Father's account in his diary of his life at Harvard and what I have heard him say, indicate that the methods of instruction and the whole routine of student life in Lawrence Scientific School were then very different from those in Sheffield Scientific School at Yale when I was a student there in

*The Institute was opened in 1847, as a private school to give higher education than was obtainable in the district schools. When opened it had a principal, an assistant principal, eight teachers and 174 students. It was incorporated by the State, June 25, 1849. About 1856 Norway Village District purchased the ground and buildings and the Institute became the Norway High School. Father was a student there 1853-59 and his brother, Byron, was principal 1856-59, except during one winter term.

1882-85 and even more different from what they are now.* Evidently by far the greater part of the instruction was given by Prof. Agassiz, himself, by formal and informal lectures, personal conversations and a large amount of laboratory work, field collecting and observation. In his diary father frequently speaks of long walks with Prof. Agassiz during which scientific subjects were discussed and he sometimes visited the students in their rooms and talked with them informally about such matters. Apparently zoology and geology were the subjects of nearly all of Agassiz's talks and lectures and of most of the studying and laboratory work of the students. However, father also speaks highly of a course of lectures he attended, given by Dr. J. Wyman, on anatomy, osteology, embryology and related subjects and also mentions a few lectures by Prof. Clark on cellular tissue.

Evidently everything was very informal with no recitations and with no definite lessons assigned. Nor does there appear to have been any fixed time for attendance or vacations. Father usually worked right through the summer but was away from Cambridge on scientific collecting trips during portions of his first three summers at Harvard. Occasionally he applied for and obtained leave to go home for short periods at various times during the year. The final examinations before graduation were oral. Father and N. S. Shaler were examined at the same time, being questioned alternately for three hours or more on July 7. They were then told that they had obtained the "first degree" (B.S.) but they did not actually receive their diplomas until July 22, 1862.

Nothing said above should be taken as indicating that the students did not work hard. On the contrary, most of them evidently spent much more time on their college work than, in my opinion, do most of the students of today.

In the summer of 1859, at the suggestion of Prof. Agassiz, father went to the island of Grand Manan, N. B., and collected for the Museum about 1200 embryos of sea birds from partly incubated eggs and also procured a large numbers of skeletons of birds and fishes. The embryos were particularly needed in the study of the development and relationship of this group of birds.

In 1860, the exact date does not appear, Prof. Agassiz appointed father as his assistant in the Museum of Comparative Zoology, with entire charge

*The account given herein regarding father's life at Harvard is chiefly taken from a diary which he kept between January 1, 1860, and December 21, 1863. It is nearly continuous until the latter part of 1862; thereafter there are many periods during which he made no entries. Much of the diary concerns his scientific work but there are also numerous notes about personal and family matters, his fellow students and regarding national affairs during the Civil War. This diary has been given to the Harvard Library with the proviso that it may be taken out by a member of the family for consultation or publication.

of the mammals, birds, osteology and corals. This position he continued to hold until early in 1864, nearly two years after his graduation.

In the summer of 1860 father and two classmates, Alpheus Hyatt and N. S. Shaler, made a collecting trip to Trenton Point, Me., and the adjacent Island of Mt. Desert. They left Cambridge on June 29 and Shaler and father returned on July 21, Hyatt about ten days earlier. This was apparently a very successful and enjoyable trip. In his diary father speaks very enthusiastically of the scenery, calling it "grand, sublime and beautiful, far beyond what we had expected" and says that the view from Trenton Point made "a picture rarely equalled in Nature and *never* in Art". The chief object of this trip was the collection of marine invertebrates, though they also obtained many birds, plants, etc. They did a lot of dredging in depths of from 10 to 16 fathoms, from a rowboat or small sailboat, obtaining many interesting specimens and also collected along the shore during a period of very low, spring tides. This seems to have been the first time that any of them had done marine collecting or had much to do with marine invertebrates, except the corals in the Museum. For father it opened a new field of research and study in which he became greatly interested and to which, in after years, he devoted most of his time.

Early in 1861, Prof. Agassiz sent father and two of his classmates, Putnam and Ordway, to Washington, D. C., to obtain some specimens from the Smithsonian Institution and promote friendly relations and interest between the scientific men in Washington and the Museum of Comparative Zoology at Cambridge. Father says that his instructions amounted to: "Get as many corals, birds, birds' eggs and mammals of all kinds as you can and gain the good will and confidence of Prof. Henry by talking with him." They started on February 4, going by train to Groton, Conn., and by boat to New York, arriving at 6:30 a.m., February 5. They took the ferry to Jersey City and then a train, which "started without warning", evidently to father's surprise. At Camden, N. J., they had to cross the Delaware River to Philadelphia by ferry and at Havre de Grace they crossed the mouth of the Susquehanna River by a boat "very different from the others in make-up and in the people aboard. The chief part of the deck was occupied by a large saloon with a great quantity of bars where various liquors and oysters were sold in abundance". When they again took the train "the ladies were put in cars by themselves and the men spirited and smoked in all the other cars". They finally reached Washington at 6:00 p.m., about twelve hours after leaving New York.

This was probably the first time father had been south of Massachusetts and evidently he saw much which was novel and interesting to him. He describes in his diary the various geological formations he saw along the route and also various birds. Some of the country did not appeal to him. He speaks

of the "gloomy land of Jersey" where he saw not much of interest except a flock of crows and the red soil at New Brunswick and other places, derived from decomposed sandstone. He describes Philadelphia as neat and prosperous but remarks that it looked "mechanical and monotonous" as the streets were all straight and regular and nearly all the buildings were built in the same manner, of brick, and every one had white wooden shutters to the windows and white doors and most of the door steps were of white marble. This was in great contrast to the narrow, crooked streets of Boston and many other New England towns to which he had been accustomed. He notes that there was no snow south of Philadelphia, except in patches, that the cattle were grazing in the fields and the country was "much finer". He describes Baltimore as "a dirty, muddy and ugly city of large size", which they had to cross in horse cars. In Washington they went to the National Hotel, which "appears to be good except that the rooms are neither good nor well furnished. The board is excellent".

The next day they went to the Smithsonian and met Prof. Spencer F. Baird, Assistant Secretary, and a number of other scientific men. Father was told by Prof. Baird that he could probably get the desired specimens of corals but that there was little chance of obtaining birds and mammals as most of the specimens of these groups had been distributed. That day father and his companions left the hotel and engaged board and "first rate" rooms in a private house for \$10 per week. On February 7, father met Prof. Joseph Henry, Secretary of the Smithsonian, whom father speaks of as a "very fair man and very conscientious in the discharge of his duty". It was arranged that, under the direction of Prof. Baird, father should overhaul and work on the collection of corals belonging to the Smithsonian.

He began this work that same day. The corals were stored in the basement of the Institution and he found many "in very bad order, broken and dirty and without labels". He worked identifying them, selecting type specimens, making up sets of duplicates, cataloging and putting the collection in good shape. It was arranged that in return for this work the first set of duplicates should go to the Museum of Comparative Zoology. When father and his two companions left Cambridge it was with the understanding that they were to be gone only a month, as the funds available for their expenses would not permit a longer absence. Before the close of February it became evident that father could not complete his work on the Smithsonian corals in a month. Prof. Baird was very anxious that he should finish it and father offered to give his own time without pay "for the things need to be fixed up very much and it would be a great loss to Science to allow them to be destroyed". Finally Prof. Baird agreed to pay his expenses in Washington and he continued work on the corals and also, to a lesser extent, on some collec-

tions of polyps. Putnam left for Cambridge on February 20 and Ordway on March 5 but father remained until March 20.

While in Washington father met and associated with a number of scientific men, some already distinguished, more of them comparatively young men who were later to become well known in various lines of natural science. Among these men were:

Prof. Joseph Henry, one of the most distinguished scientists of that time, Secretary of the Smithsonian Institution since 1846 and later also President of the National Academy of Sciences from 1868 until his death in 1878.

Prof. Spencer F. Baird, Assistant Secretary of the Smithsonian and a well known ornithologist, who in 1871 was appointed U. S. Commissioner of Fish and Fisheries and who, after Prof. Henry's death succeeded him as Secretary of the Smithsonian.

Dr. John S. Newberry, prominent geologist and early member of the National Academy of Sciences. He practiced medicine for several years, took part in various U. S. exploring expeditions in the west, including one of the Colorado River, and later, until his death in 1892, was professor of geology and paleontology in Columbia College. Father says of him: "He is a fine man in every respect and I admire him very much".

Mr. John Cassin of Philadelphia, a prominent ornithologist and author of some very valuable works on the subject. Father describes him as "a gray haired man of about fifty, pretty thickly built, with a heavy beard and keen, twinkling eyes".

Count Louis F. dePourtales, zoologist, born in Switzerland, where he was a pupil of Prof. Agassiz, came with him to America and joined the U. S. Coast Survey in 1848; later succeeded Agassiz as head of the Museum of Comparative Zoology. He was the first in this country to attempt deep-sea dredging.

F. V. Hayden, geologist, surgeon in Union Army during the Civil War; took part in various western surveys and was director of the U. S. Geological Survey of the Territories until 1879; professor of mineralogy and geology at University of Pennsylvania, 1865-1872.

Dr. Wm. Stimpson, marine invertebrate zoologist, published papers on marine fauna of Bay of Fundy (1851), marine invertebrata of Grand Manan (1853), crustacea and echinoderms of Pacific Coast (1857,) etc., etc. Well known authority and writer on the same subjects as my father. He was the first to call on father and his companions at Washington, almost as soon as they arrived.

Prof. Edward D. Cope, born 1840, zoologist (fishes and reptiles) and paleontologist; member of Academy of Natural Sciences, Phil., 1861; professor of natural sciences, Haverford College, 1864; member National Academy of Sciences, 1872; president of American Society of Naturalists, 1895; professor of geology and palentology, University of Pennsylvania; author of over 1200 scientific papers.

Prof. Theodore S. Gill, born 1837, zoologist (fishes); with U. S. Fish Commission in charge of marine vertebrates; professor of zoology in Columbia College, 1884.

In his diary, father notes meeting and talking with many other scientific men while in Washington. Those named above were the ones with whom he spent the most time and with whom he seems to have had the greatest common interest. Many of them, including Prof. Henry, Prof. Baird and Dr. Stimpson, he had previously met in Cambridge, but apparently had known

them but slightly. While in Washington he became well acquainted with them and formed life long friendships with most of them. This was particularly so with Prof. Baird, with whom father was subsequently intimately associated on the U. S. Fish Commission and for whom he always had the greatest affection and respect.

In the evenings, some of the men named above usually called to see father and his classmates or they returned such calls. At such meetings much of the conversation was on scientific subjects, with an occasional purely social evening. Such visits to and from Prof. Baird and Dr. Newberry were frequent and Stimpson, Cope, Gill and Hayden were constant callers and companions. Father also mentions calling several times at Prof. Henry's house and meeting his wife and three daughters, whom he speaks of as very agreeable acquaintances and says: "They are very pleasant, very intelligent and quite good looking and appear to care very little for the fashions and frivolities of Washington life". Once or twice he speaks of meeting two of them in the hall of the Smithsonian, where they were "practicing on parlor skates".

On Sundays, if the weather permitted, father and some of his friends went for long walks. Along Rock Creek, then as now, was a favorite one, where he speaks of the scenery being "wild and beautiful" and where he collected a number of plants and several species of snails. Once or twice they went into Virginia, crossing the bridge over the Potomac, which he describes as a "terribly muddy and dirty stream like all others of this region". Another walk was to Georgetown, which he says was "an old, deserted-looking, dirty-looking town and extremely southern in every respect". After a visit to the Washington Monument he says: "It is now 170 feet high and quite imposing though not appearing very high on account of its size. I was much surprised to see what poor stone they have used for the foundation. It is part sienite and part mica slate but all of poor quality, brittle and full of iron pyrites. I went inside and was disgusted at the barbarity displayed by visitors who have not only completely covered the walls with their disgraced names, left as witnesses against them, in pencil marks and red chalk on the polished marble, but have even painted them with black paint and *cut them in* with jack-knives. I would be ashamed of my country if many of the names did not indicate a foreign origin but I fear that far too many are Americans."

Washington, as a city, apparently did not impress him very favorably and the leisurely manner of life there, compared with that to which he had been accustomed, surprised him. Shortly after arriving he remarks: "Washington is a very peculiar city in many respects. One peculiarity is that nobody whom you meet seems to have anything particular to do and is in no hurry." He often speaks of the alternately muddy and dusty condition of

the streets which I think were then unpaved, and I remember his telling me, years afterwards, of seeing pigs running loose on Pennsylvania Avenue. Several times while he was there, there were fires and he remarks on the apparent inefficiency of the fire department. Of the public market he says: "It is the most ludicrous place that I ever saw, the most conspicuous things being poor horses and worse negroes, immense lumps of greasy looking butter and dried up carcasses of meat. . . . There were swans, geese and ducks in abundance for sale." On the other hand he was very favorably impressed by the Capitol itself which he says "is a very fine building and when finished will be splendid." He also speaks particularly of the very fine view of the city and surrounding country from the dome. Of course conditions in Washington are now, and have been for many years, very different from those father describes. I was there during the winter of 1888-1889 and the city was then clean, the market good and the fire department efficient. I have quoted father's remarks to show what a great change there was in a relatively short time.

Although the city itself has changed greatly the weather was then as erratic and changeable as now. Father notes that on February 8, the coldest day of the year, the temperature was 4° F. Two days later the air was "very soft and balmy and it seems like May." On March 3 it was 80° F. in the shade and on March 5 it was down to 28° F. and windy and cold. Snow squalls were frequent, 2 inches of snow falling on March 18.

At that time, owing to the imminence of the Civil War, Washington was seething with political turmoil, to which father makes frequent reference. On February 26 he visited the Senate twice and the House once and in the latter was much interested in an address by Mr. Burnett of Kentucky concerning the existing crisis and the opposition to compromise from the northern members. He says the galleries were much crowded and there seemed to be great interest in the proceedings. On March 2 he wrote: "Political affairs look very bad today and many have given up all hope of a peaceful settlement. I still have faith in the common sense of the people." He says that in a conversation with Prof. Henry on March 4, the professor told him that he believed that "this government cannot exist 25 years longer even if the present crisis is safely passed." On February 12 he attended a reception by President Buchanan at the White House, where there was a great crowd, the rooms were very warm and he was glad to get out and go home early. On Washington's birthday he went to see the parade but says he was most interested in the crowd, which was "a most singular concourse, made up of men, women and children of all ages and classes and belonging to every state and nation."

Of President Lincoln's inauguration he writes: "We joined the immense crowd in front of the platform built on the eastern steps and waited there in

the dust and sun until one o'clock for the procession to come. It should have been there at 12 o'clock. We had a position very near the front. The procession finally arrived and Lincoln appeared with the other chief officers and Mrs. Lincoln was also visible. She is quite a pleasant and good looking woman. Mr. Lincoln is a much better looking man than I had expected from his photograph. His side whiskers improve his looks very much. He delivered his inaugural address in a clear and distinct tone and it was heard and applauded by nearly all of the vast crowd assembled around him. Everybody seemed pleased with it. After the applause had subsided the oath was administered by the Chief Justice. Douglas stood by with a very sour, red face. Wigfall had a pig-tail-curl in his lips and Buchanan looked very guilty and sheepish. But most of the people looked pleased, happy and hopeful." On March 8 he wrote: "In the evening I went to the President's first levee. There was a terrible jam and it was almost impossible to get in. There were four times as many as there were at the last one I went to.* Shook hands with Lincoln who seemed *hard at work*. Saw Mrs. Lincoln who is quite small and quite handsome. She looks very young and I should think that she is very pleasant. I also saw Mr. Douglas and his wife, who has the reputation of being the handsomest lady in Washington. She is quite large and much taller than 'Stephen', the little giant. I finally got away more fortunate than many, for much to my surprise I lost neither my overcoat or hat."

He completed his work on the Smithsonian corals and on March 20 left Washington, arriving in Philadelphia that evening. He spent the following day in Philadelphia, visiting the Philadelphia Academy, meeting Dr. Joseph Leidy and other scientific men and looking over the collections there. Early on March 22 he left for New York, arriving about noon and walked up Broadway where he saw "some very fine buildings, a great many people and an immense quantity of mud and slush," resulting from the recent snow fall. That night he took the boat to Stonington and finally, early in the morning of March 23, reached Boston, where he says the streets were filled with snow deeper than he had ever seen them before.

Late in 1860 father and two classmates, N. S. Shaler and Alpheus Hyatt, began to plan an expedition during the following summer to Anticosti Island and the coast of Labrador, to make general collections of the fauna and flora and particularly of the Silurian fossils which were known to be abundant on Anticosti. After trying in vain during May, 1861, to obtain passage on some vessel bound there, they were finally obliged to charter a vessel. A suitable one at a price they could afford to pay was difficult to find but they finally chartered a small, fishing schooner, the "Inlet," 47 tons register, for

*President Buchanan's levee on February 12.

\$40 per month and luckily succeeded in hiring a very competent man, Capt. Mariner Small, as sailing master. Father says in his note that Capt. Small, a deacon in the Baptist Church of Eastport, was agreeable, well educated, an experienced navigator and took much active interest in their scientific work. At Eastport Mr. Upham S. Treat, Jr., not a scientist but a personal friend, also decided to join the party and proved to be a very valuable addition, being an experienced seaman. They hired no crew except a cook, the three students and Mr. Treat acting as their own crew under the orders of Capt. Small. They sailed from Eastport about June 15 and on their return docked in Boston Harbor on September 3, 1861. This expedition was very successful. They made large collections of the existing fauna and flora and secured forty barrels of fossils. During the following year father published, in the Proceedings of the Boston Society of Natural History, five papers concerning the natural history of Anticosti, containing lists of the mammals, birds and plants observed. Owing to the Civil War the reports concerning the fossils were not completed.*

During the summer of 1862 father made no scientific collecting trips. Due to the serious illness and death (April 19) of his father, he was in Norway from March 29 to May 29 and again for nearly a month during August and September. His mother had died the previous November, when her youngest girl was but little more than five years old, the next one eight and the youngest boy not quite twelve. Hence it was necessary to find homes for the children and provide for their support and care, as well as to attend to the settlement of the small estate and the various other things which have to be done at such times.

After February, 1863, the entries in father's diary are not continuous; from June 5 to December 19 there are none and the last entry is on December 21, 1863. Consequently I have no detailed account of what he did during the summer of that year. However, I have a cash account which he kept from December, 1862, to August, 1864. This shows that he went to Eastport on August 31, 1863, and subsequently to Grand Manan. Apparently he was away from Cambridge about six weeks. That this was chiefly a collecting trip seems certain, as his salary continued while he was away and Prof. Agassiz also paid him \$15.25 for "expenses at Eastport." However, as this amount was much less than the amount actually incurred, he may have considered this as partly a private or pleasure trip. This was the last scientific collecting

*During this expedition father kept a daily journal. It gives a very complete account of the expedition, contains numerous notes on the zoology, geology and botany of Anticosti and Labrador and also 15 very good pencil sketches, by himself, showing some of the places visited. This journal has been given to the Harvard Library under the same conditions that his diary is given.

trip he made while connected with Harvard. Just when he resigned his position as Prof. Agassiz's assistant does not appear in his notes, but it was apparently about the end of May, 1864, and may have been somewhat earlier. During a portion of the time in April, May and June, 1864, he was employed by some mining companies in examining and reporting upon property in other states regarding the location and development of mines thereon. Later, during that summer, he was appointed as Professor of Zoology in Yale.

Before entering Harvard most of father's study and investigations in zoology had been concerning birds and mammals, with comparatively little time devoted to invertebrates, although he had made some collections of the larger insects and of the land and freshwater shells. Not long after entering college he began working on corals. Prof. Agassiz had a predilection for acquiring an almost unlimited number of birds and mammals preserved, entire, in alcohol. Such specimens included animals as large as a bear and common species as well as rare ones. Part of father's duties as Prof. Agassiz's assistant were to take care of and preserve these specimens. Many were preserved in alcohol, others being skinned and mounted. A large, perhaps the largest, part of father's time was spent working on the collection of corals, both fossil and existing ones, and he soon became greatly interested in this group. As heretofore stated, while in Washington in 1861, most of his time was spent in working on the Smithsonian collections of corals. Among his earliest publications were two short paper on corals and polyps, published in 1862, and he notes that his final examination prior to graduation was chiefly on polyps and general questions on zoology. His interest in corals and polyps continued throughout his life and in later years he dropped, to a large extent, ornithology and vertebrates in general and devoted his time to invertebrates.

While at Harvard, both before and after graduating, father worked long hours at the Museum and spent much of his time in the evenings in studying, reading and writing on scientific subjects. During 1862 and 1863 he prepared and published twenty-two papers (including one edited by him) ranging in length from 1 to 45 pages. Of these papers, 15 were on vertebrates, 3 on polyps and corals, 1 on plants, 2 on minerals and 1 on general natural history. Most of these papers were published in the Proceedings of the Boston Society of Natural History but several were in the Proceedings of the Essex Institute.

While at Harvard father was associated with a number of other young men who were studying under Prof. Agassiz. With most of them he formed friendships which continued in after life, when he and they had become noted scientists. Perhaps those with whom he was most intimate were the four following named classmates:

Alpheus Hyatt, one of his companions on the Mt. Desert and Anticosti expeditions and a very close friend, for whom my brother, A. Hyatt Verrill, is named. Hyatt enlisted, August 19, 1862, in the 47th Mass. regiment, was promoted through the grades to rank of captain and served until the close of the Civil War. Subsequently he was Prof. of Zoology and Palontology, Mass. Inst. Tech.; Curator of Boston Soc. Nat. Hist., 1881, and Member Nat. Acad. Sci.

Nathaniel S. Shaler, another very close friend and member of the Mt. Desert and Anticosti expeditions. He and father were messmates at Harvard, spent many Sundays together on long walks and were examined together for graduation. During the Civil War Shaler was an artillery officer in the Union Army. Subsequently he was Prof. of Paleontology (1868) and Zoology (1887) at Harvard; Dean of Lawrence Scientific School (1891), and from 1884 Director of Atlantic Division, U. S. Geological Survey.

Edward S. Morse, father's chum and roommate much of the time at Harvard but who left college before graduating. In 1866 he became Asst. Director of Peabody Acad. Sci. and Director after 1880; Prof. of Comparative Anatomy and Zoology, Bowdoin, 1871-74; Prof. of Zoology, Imperial Univ. Tokio, 1877-80, and for work there the Japanese government conferred upon him in 1898 the Order of the Rising Sun and in 1922 the Order of the Sacred Treasure. Was an authority on Japanese ceramics. He held the following degrees: Ph.D., Bowdoin, 1871; M.A., Harvard, 1892; Sc.D., Yale, 1918.

Fred. W. Putnam, another member of this group of close friends and one who accompanied father to Washington, D. C., in 1861. Putnam became an archeologist and ethnologist and was appointed professor of these subjects in Harvard in 1896.

Of the men named above all, except Morse, graduated from Harvard at the same time as father did, 1862. In addition to these four men there were a number of others who were studying under Agassiz and with whom father was closely associated. Some had already graduated at Harvard or elsewhere; some did not graduate until after father did and still others were special students, not candidates for a degree. Among those he most often mentions in his diary and notes are: Wm. Stimpson, Ordway, S. H. Scudder, G. W. Emerson, A. S. Bickmore, Theo. Lyman, A. S. Packard, Wm. H. Dall, Caleb Cook, J. T. Rothrock, J. A. Allen, Elliott Coues, Foley, Horace Mann and a number of others. Many of these men subsequently became eminent scientists with whom father maintained a close friendship as long as they and he lived. There are a few he speaks of only by their family names and I am unable to further identify them. Many of the students entered the army during the Civil War and some of those of whom I find no further record may have died in the service. I have an impression that in later years father said that Ordway, with whom he was very intimate, and Foley were among those who thus gave their lives. A number of the others, who later became distinguished scientific men, also served in the army, Bickmore, Lyman and Rothrock being among them. Father began training and drilling preparatory to enlisting, which was then quite customary, but his health was then poor and he was unable to stand marching in double time and other strenuous

exercise and had to give it up. He then decided to study to become a surgeon but gave that up because of the closing of the War.

While he was Prof. Agassiz's assistant, father met many prominent men. The museum was a new thing and Agassiz had a wide reputation as a scientist, as a consequence a great many people visited the museum. Father thus met many leading scientific men, among them Prof. Henry, Secretary of the Smithsonian Institution, and Prof. Baird, Asst. Secretary. In later years, after Prof. Baird became Secretary of the Smithsonian and head of the U. S. Fish Commission, he called upon father to take charge of the deep-sea explorations to be made by the Fish Commission. This father agreed to do and for many years was connected with that work. In addition to the scientists, many other people visited the museum and father was often called upon to show them around and explain about the collections. In his diary he mentions thus meeting the Prince of Wales (later Edward VII of England), the Comte de Paris, Genl. Geo. B. McClellan, Edwin T. Booth, the actor, and various officials, politicians, etc.

While at Harvard father also became very well acquainted with Prof. Agassiz's son, Alexander Agassiz, and formed a friendship with him which lasted as long as Agassiz lived. After his graduation from Harvard in 1855, Alexander Agassiz took the necessary post-graduate studies, became a mining engineer and for several years was superintendent of the Calumet and Hecla mine near Lake Superior. Later he became a large stockholder in that company and amassed a fortune. He had always been much interested in zoology and his mining work did not cause him to lose that interest and after he became wealthy he spent and gave large amounts for zoological investigations, publications, etc. During 1877-'80 he supervised, and largely paid for, a series of extensive deep-sea explorations by dredging and sounding made by the U. S. Coast Survey steamer "Blake." During these expeditions large collections of invertebrates were obtained. Agassiz requested father to study these collections and write reports upon them, offering to pay the cost of publication and for the preparation and printing of the illustrations. Father agreed to do this work, entirely without compensation. In 1881 and 1883 he published three such reports on the Anthozoa and Cephalopods. A fourth report, his "*Magnus opus*" as he called it, was his "Deep-Sea Alcyonaria of the Blake Expedition." Alexander Agassiz died before this report was completed but provided in his will sufficient funds to finish it. Father spent many years working on this report and completed it, including the printed plates, in 1923 and sent it to Cambridge for publication, but it has never been published.

Although father and the other students studying under Prof. Agassiz worked hard, they found time for some recreation. It was, for the most

part, quite different from that sought by the students of today. None of father's classmates seem to have taken up athletic sports to any considerable extent for I find no record of any of them playing baseball or football or even attending any such games. Basketball, tennis and a number of other games now played a great deal were practically unknown in American colleges in those days. Father mentions practicing fencing with Shaler early in 1860 and on October 11 of that year he joined the gymnasium. On Sundays and holidays, when the weather permitted and sometimes when it was quite unfavorable, father and one or more of his classmates went for long walks, frequently being gone all day. On these walks they almost always found interesting botanical and zoological specimens and geological formations. Shaler seems to have been the one who most frequently accompanied father but Hyatt often went and sometimes there were several in the party and occasionally father went alone "for exercise," he says. Now and then, during the warm weather, they went rowing on Fresh Pond. During the winter, when weather and ice were favorable, they went skating on some of the various ponds. Father speaks particularly of one afternoon that Hyatt, Shaler and he spent skating on Fresh Pond, saying he had never seen such splendid ice, so thoroughly transparent that they looked down and saw unios and other fresh-water shells and the water plants growing on the bottom. He adds: "Everything was delightful and I know we all felt happier for the recreation." Two or three times he mentions breaking through the ice and running back to his room, a mile or two, his clothes being frozen stiff before he arrived, an experience I think most boys have had. Years afterward I learned to skate on the same old "rocker" skates he used. The upper part was of wood with a long screw in the heel to screw up into a hole bored in the leather heel of the shoe. The blades of the skates were a solid piece of steel, the bottom being considerably curved, hence the name "rocker."

Father also speaks of making, together with the other students, a garden in which he sometimes worked until nine o'clock in the evening and also an artificial pond, fed from a convenient spring, in which they kept fishes, salamanders, frogs, water plants, etc. In addition they had quite a menagerie consisting, at various times, of snakes, turtles, woodchucks, hedgehogs, a fox, etc. and also several hives of bees which father's grandfather sent him.

A source of entertainment, as well as of zoological interest, were the "Aquarial Gardens" which father and the other students visited frequently and to which they took their friends. The exhibits in these "Gardens" were not only such as the name indicates but also included various terrestrial animals and even human aborigines. During one visit father speaks of seeing five "South Africans" perform their native dances and mentions a Bushman.

a Hottentot and a Fingo. During the same visit he also saw a moose and some kangaroos.

In his diary I find no mention of his going to the theater, but he speaks of attending the opera or other musical entertainment a few times. Once with Shaler to the opera "The Martyrs," which he says was "first rate;" another time to a promenade concert in Music Hall. This rather surprises me as father was not a musician and very rarely attended such entertainments nor did the theater seem to interest him very much. Probably as a student he went at the request of some classmate. He speaks of their having a piano "for the hall," presumably where they roomed, and I have heard him tell of one of his chums, I think Morse, who would go to an opera he had not heard before and come back and play it all, from memory, on the piano.

Many of their evenings the students spent in their rooms studying, writing, visiting one another and talking, frequently on scientific subjects. Occasionally Prof. Agassiz would drop in and spend an evening with them and sometimes took some of them out to dinner. They also had a club among themselves, called the "A. Z. Club," which met about once a week. At these meetings one or more of the members read papers on scientific subjects, which were followed by a general, informal discussion. In July, 1860, this club was given up and they formed another, which father speaks of as the "Society of Zoologists," apparently similar to the A. Z. Club but wherein it differed he does not say. In addition to these scientific meetings of their own, most, perhaps all, of the students were members of the Boston Society of Natural History (father's membership was from May 2, 1860) and quite regularly attended its meetings.

Once or twice father speaks of some of the students playing whist, which he thought "exceedingly foolish." He looked upon card playing as a waste of time and considered time of the utmost value. I never knew of his playing cards himself nor do I think he even knew the names of the cards in a deck. Yet when my sisters and brothers grew up they often had card parties at home, to which he made no objection though he did not take part.

Occasionally father speaks of some of the students drinking, sometimes too much. Father, like his father and grandfather, was very strongly opposed to anything of the sort. He never used distilled liquors at all and as far back as I can remember could rarely be persuaded to even take a glass of beer or wine at home. He told me of an agreement between another student and himself by which the other one was to quit smoking for a month if father, during that time would drink three glasses of ale each week. Father's health was then not very good and his friend thought the ale would improve it. Father was very sure his chum would be better off to stop smoking. How-

ever, the latter was so miserable without his pipe that at the end of the first day they agreed to cancel the agreement.

In those days, and for many years afterward, social calls were in vogue. One called on friends without any special invitation, simply to see and visit with them without any thought of eating or drinking or other entertainment. Unfortunately this pleasant custom has now largely disappeared. Following this custom father and the other students very frequently made such calls on various friends of both sexes who lived in Boston or some of the adjacent towns. There was also a young ladies' seminary at Somerville and quite often they walked out there to call on some of the girls whom they knew.

Owing to his limited finances, he was obliged to practice a very rigid economy while a student at Harvard. Although Prof. Agassiz appointed him as his assistant in 1860, he received no salary until he graduated in 1862. Perhaps the work he did helped to pay for his tuition, he said nothing with regard to it. Beginning July 1, 1862, he had a salary of \$50.00 per month. How he managed to get along during the previous three years he did not say. He sold to Prof. Agassiz, for the Museum, the collection of birds, mammals, etc. which he had made while living in Norway, Maine.

The five years which father spent at Harvard were very critical ones in the history of the Nation, being just previous to and during the Civil War. In his diary he often speaks of the impending crisis and subsequently of the progress of the war. Before it began he had hoped it might be averted and said he still had faith in the common sense of the people. The following quotations are from his diary. (1861):

April 13: "We received news of the commencement of the bombardment of Fort Sumter. There is great excitement and anxiety concerning the news. Prof. alluded to these civil troubles in a very feeling manner in opening his lecture."

April 14: "In the morning we received news of the surrender of Fort Sumter! This, though not unexpected, caused a great deal of excitement. It is enough to make one heart-sick to think what a disgraceful war we are about entering upon or have now really commenced. But I see no possibility of any adjustment without fighting and the sooner it is done now, the better it will be for all parties concerned."

April 15: "Lincoln has called for 75,000 men at once!"

April 17: "Two regiments of troops left Boston for the South . . . There is a rumor that Virginia has seceded!"

April 19: "In the afternoon news came of the row in Baltimore between the Mass. troops and a mob. There was in consequence intense excitement."

April 20: "I went to Faneuil Hall where the troops are quartered. Some were expected to leave at five o'clock and the streets were full of excited people so that it was nearly impossible to get along. There are thousands of flags flying! I then went up to the State House where the Light Artillery was preparing to go. There was another immense crowd waiting for their departure!"

April 22: "I resolved to join a 'drill club' at once so as to be ready to do good service if required."

April 24: "No news of importance. I feel exceedingly dull and gloomy with the thought necessarily forced upon me at this time. Don't enjoy anything and hardly wish to! Wish I could find some excitement or amusement to take my thought away from this infernal, *accursed* war!!"

April 25: "The company to which Ordway belongs was ordered to Fort Independence this forenoon and he has gone. I imagine that he will find his new situation anything but agreeable and that soldiering is *not very romantic*."

April 27: "In the afternoon I attended a great mass meeting under the great Washington Elm. There was a good band and a big crowd and a regiment of soldiers under marching orders for Washington. Gov. Banks was there and made the best speech of the day. It looks like war certainly and the people seem to be beginning to feel it!" "After the meeting there was a great excitement about guarding the arsenal and Prof. came round to our rooms, full of excitement, after our mattresses for the guard. We gave them more than half of those we had and I slept on my lounge. There had been great quantities of munitions of war moved to the arsenal and it was feared that attempts might be made to burn it."

May 15 : "In the afternoon I went to Boston with Bickmore to see the Maine regiment arrive. We waited about two hours before they came. Such a lot of strong, hardy and brave looking men are rarely seen. They were received with a great deal of enthusiasm from an immense crowd of spectators."

From the middle of June until early in September, Hyatt, Shaler and father were on a cruise to Anticosti and Labrador to make scientific collections. While on their cruise they were cut off most of the time from news of any sort. Upon their return father received word that his parents were seriously ill and he went at once to Norway, remaining there, except for about three weeks, until the middle of December. His mother died November 14 and because of his father's very poor health it was necessary for the three eldest sons to close out their father's business and liquidate his stock of goods. The following March he was again called home. His father died April 19, 1862. He remained in Norway until the last of May to help make various arrangements regarding the small estate, to provide for the care of the younger children and to attend to the many things which it is necessary to do at such a time. Probably largely due to these family troubles during this period the entries in his diary regarding the war are few and brief, consisting only of notes of having received news of the various battles and other outstanding events of the war, like the following. (1862):

February 14: "We had news of the fight at Ft. Donelson and official accounts of the battle at Roanoke Id. There is great excitement."

February 17: "The news of the surrender of Ft. Donelson was received and there was great rejoicing."

The following entries show how the war was more and more affecting everybody. (1862):

June 30: "There is great excitement and anxiety about the battle that is going on at Richmond. News comes very slowly."

July 2: "We heard of the proclamation calling for 300,000 more men!"

July 28: "Eve. went to the Drill Club and was drilled for nearly two hours. It was very hot and the room very close and I was nearly roasted." (Had been drilling for some time previously).

August 4: "Heard of the call for a draft of 300,000 more men!"

August 5: "Rothrock came very unexpectedly. He said he was going right back to Penn. and join the army! I have had to quit drilling myself, not being able to stand the double quick march, etc."

August 6: "Had a letter from Washington (his brother) who is in the 17th Maine Reg. encamped near Portland. He expects to go south next week."

August 8: "Heard of the order prohibiting persons from leaving the state."

August 9: "Clark talked about enlisting and Hyatt did so by joining the 4th Battalion."

August 15: (At Portland) "I met Wash. Was with him the rest of the day shopping, etc. Rode out to camp with him and stayed till evening."

August 16: "In the afternoon went to the camp and stayed over night with Wash. Liked his captain, Golderman . . . Went with Wash. to inspect the guard, etc."

August 21: "Went into Boston and met the 17th Reg. at the cars and walked through Boston with them and had a chance to see Wash. some time in the cars before they left. They had a hard march but all seemed in good spirits. In the eve. saw Hyatt and Emerson. Hyatt is sergeant in the 4th Battalion."

September 18: "This period has been marked by many important movements of the armies and by many bloody battles. Wash. is at Fort Richetts near Washington." "Hyatt has been chosen 1st Lieut. in Co. A, 47th Reg. and is in camp. Bickmore is also in camp."

November 3: "There was considerable excitement about the Alabama (a Confederate privateer) being off Boston."

December 7: "It was bitter cold and very windy last night. How the poor soldiers must suffer."

After November 22, the diary is not continuous. During the latter part of 1862 there is but little regarding the war, and only brief notes as to news being received of battles fought, etc. The lack of notes in his diary does not indicate that father lacked interest in the war. On the contrary, I know from what he said in later years that he was intensely interested in it. Moreover, his brother, Wash., was severely wounded at the battle of Gettysburg (July 1-3, 1863) and was back in Maine while recovering from his wound, yet nothing appears regarding this in the diary. It was simply that father became more and more deeply engrossed in his scientific work and did not take the time to write up his diary.

Father's first interest in natural history had been in minerals and before entering Harvard and throughout the time he was there he had devoted much time to the study of mineralogy and geology and had become an expert in

these subjects. Consequently it was quite natural that work as a geologist and mineralogist should seem to offer the best chance to earn some money. Apparently his first work of this sort was an examination and report on an iron mine near Franconia, N. H., which he made in April or May, 1864. In June and July of that year he also examined and reported on other mining or prospective mining properties in Orange County, N. Y., and McKean County, Penn., and perhaps elsewhere.

Late in June, 1864, he had been in New York in connection with some of the above named mining work and on his way back he stopped in New Haven to call on Prof. James D. Dana, with whose works and writings on geology he was familiar. He then went on to Amherst to do some work on the collections there and on his return, about two weeks later, again called on Prof. Dana. As a result of these visits he was appointed to a full professorship in zoology in the Sheffield Scientific School of Yale University when only about 25½ years old, younger by about ten years than most professors are when appointed. This position he retained for 43 years, until he was retired because of age in 1907. When he was appointed professor of zoology, he was also made a member of the Governing Board of the Scientific School and curator of all the zoological collections at Yale. This position he continued to hold until 1910. In addition to his duties given above, he gave instruction in geology in the Scientific School for 24 years, 1870-1894. This course in geology consisted of regular recitations at 8:00 a.m. each morning and was obligatory for all seniors in the school except those taking the course in mechanical engineering. Father was the last of the older professors to have 8 o'clock classes. He used Dana's "Manual of Geology" as a text book and in addition to lessons therefrom each student was required to make a collection of a certain number of kinds of rocks and of minerals (as I remember it, at least twenty of each) and to pass an examination thereon. Before the examination father, on request, would identify any rock or mineral but at the examination the student had to name each specimen; tell whether the rocks were sedimentary, metamorphic or igneous, of what minerals they were composed, and give the chemical composition, hardness, crystalline form and other characteristics of each mineral specimen. This was a very practical and useful method of instruction. I know that what I thus learned has been of great value to me as a civil engineer.

During the first year after father was appointed professor at Yale, he and Prof. Daniel C. Eaton, Professor of Botany, roomed together and kept bachelor's hall. During this time they formed a friendship which lasted as long as they lived and in which their families also participated after they both were married. On June 15, 1865, father and mother were married at Norway, Me., and I think they spent that summer at, or near, Lake Cham-

plain, where father was engaged in the examination of some mining properties. When college opened in the fall and he returned to his duties there, they lived in a rooming and boarding house, as many of the younger college people did then. I remember that at the last place where we boarded our rooms adjoined those of Prof. O. D. Allen, Professor of Chemistry, who had two boys, the younger about my age, and the two families became very friendly. Mrs. Allen was, I think, my mother's closest friend and "Bill" Allen and I were classmates in Sheff and were together on engineering work after graduation. My parents first rented a house and began regular house-keeping in the spring of 1871, at 148 College Street, where Woolsey Hall now stands.

When father was first appointed professor at Yale the funds of the Scientific Department were very limited and the salaries of the professors were correspondingly low. I remember hearing father tell mother, on his return from a meeting of the Governing Board, that they had voted to reduce their own salaries until more funds were available. Even before such reduction, the salaries were so small (father's was apparently not over \$1,200.00 annually when he was appointed) that unless a professor had a private income from investments, which few of them did have, it was necessary to supplement his income by work outside of his college duties. In fact, father's college salary was never sufficient to support his family, as the size of the family and consequently the expenses, increased more rapidly than did his salary, which was never over \$3,750.00 and did not reach that amount until 1896. To increase his income, father continued for a number of years to examine and report on mining properties whenever such work was to be had. He also wrote articles for publication in various papers and magazines and gave lectures. These articles and lectures pertained to zoology or geology but were in such form as to be of benefit, or at least of interest, to people who were not scientists.

In 1867 the University of Wisconsin arranged with father to give a course of ten lectures there. He left New Haven January 29, 1868, and returned February 17. This was the first time he had been west of Washington, D. C. Evidently he saw much to interest him and kept memoranda regarding the trip. On the second day, after passing through Altoona, Penn., he says:

"Passed some wild and beautiful scenery, high cliffs and cuts of stratified rock and deep valleys far below us as we wound spirally up the mountain side. Evergreens loaded with snow . . . Beyond Pittsburg noticed coal and iron mines. Saw beautiful terraces at three levels along the Ohio for many miles. A man on the cars had some European sparrows (5 pr.) to be colonized at Champaign, Ill.)* The next morning they were

*It was one or more of such colonies which resulted in the hordes of "English" sparrows (*Passer domesticus*) which overran the country.

in Indiana, which he says is "a rough uncultivated country, though level and considerably wooded." On that day he reached Chicago and called on Dr. Stimpson at the Chicago Academy and visited with him for several hours. He arrived at Madison, Wis. about midnight. On February 3, he gave the first lecture. He says "80 or 90 present, about half ladies. All attention." The ten lectures were as follows:

February 3—A General Sketch of the Animal Kingdom.

February 4—Origin and History of Domestic Animals.

February 5—Physiology of Digestion.

February 6, 7—Reproduction.

February 10—Law of Transmission and Production of Sexes.

February 11—Breeding.

February 8, 9, 10—Insects.

Evidently father's lectures were quite satisfactory as President Chadbourne arranged with him to give a course of lectures each year and on February 14 he was notified that he had been appointed a professor there. His formal notification, is as follows:

Madison, Mch 20th, 1868

State of Wisconsin,
Office of the Secretary of State

Prof. A. E. Verrill,
New Haven, Conn.,

Dear Sir:

I have the honor to inform you that at the semi-annual meeting of the Regents of the University of Wisconsin, you were unanimously elected "Professor of Entomology and comparative Anatomy" in said University.

Respectfully

Your obedient servant

Tho. Y. Allen

Secretary ex. officio.

Under this appointment father gave similar lectures, apparently twelve each year, in 1869 and 1870. Thereafter he resigned his professorship in the University of Wisconsin because of the increased amount of time required by his duties at Yale and on other work and scientific research.

When appointed at Yale, father was the first man in this country to hold a professorship exclusively in zoology, even Agassiz being professor of both zoology and geology. However, the zoological department at Yale then consisted only of a small collection of zoological specimens of various kinds, for the most part in poor condition, known as "The Yale Cabinet" and kept in a small building on the campus.* No course of study of zoology for students had been established. The Sheffield Scientific School made possible

*See "Yale College Cabinet" by A. E. Verrill (Yale Lit. Mag., 1866).

by the generous gifts of Joseph E. Sheffield and first known by his name in 1861, had been preceded by the so called Yale Scientific School, which only existed on paper.

As far back as I can remember and probably from the time he came to Yale, father had for his laboratory a room on the ground floor of old Trumbull Gallery, a small, square, 2-story, brick and stucco building built in 1832, which stood near the center of the original Yale campus. Prof. O. C. Marsh also had his laboratory there and occupied part of the same room with father. The College Treasurer also had his office in the same building. On the second floor was a very valuable collection of paintings by John Trumbull, mainly of historical events. Among them were his well known paintings of the "Battle of Bunker Hill," "Death of Montgomery before Quebec," "Surrender of Lord Cornwallis," "Declaration of Independence," etc. Trumbull gave the paintings to Yale in consideration of an annuity of \$1,000 and subject to the condition that he and his wife should be forever buried beneath the pictures. Apparently his idea was that the paintings should not become a part of a larger collection but should always be kept by themselves in that building. Accordingly he and his wife were buried beneath the building. Years later a large Art Gallery was built on the northwest corner of the campus, at the corner of Chapel and High Streets, and it was considered desirable to have the Trumbull paintings in the new building, so they were moved there. They also removed John Trumbull and his wife, through the floor of father's laboratory, and reburied them beneath the new Art Gallery. I have not been in New Haven for many years and have an impression that the location of the Art Gallery has again been changed, but whether John Trumbull and his wife have been given a new resting place I do not know.

The first thing father did after coming to Yale was to overhaul, catalogue, label and generally put in shape the small existing collection of zoological specimens and to add to it as rapidly as possible. The funds available for such purposes were very small, usually varying from \$150 to \$300 annually, seldom more. Nevertheless, by strict economy and giving unstintingly of his own time, efforts and labor he built up the Yale collection until it was one of the best in this country. He missed no opportunity to acquire specimens and was always a most indefatigable collector himself. During most of the summers of the first six years after coming to Yale he conducted dredging expeditions for marine invertebrates in Long Island Sound and in the Bay of Fundy. In this work he was assisted by some of his students. He obtained other specimens by exchange with other institutions and private collectors. He also arranged with various collectors in different parts of the world to send specimens to Yale. From three such collectors he received

large and excellent collections, mainly of corals, sea fans (gorgonias) and mollusca, from the Gulf of California, Panama and the west coast of South America. He also received other collections, mainly invertebrates, from collectors and by exchange from the north Pacific coast, the West Indies, Florida, Brazil and even from Kerguelen Island. To acquire large mammals he arranged with the owners of menageries to send him the bodies of animals which died. Most of these were only valuable for the skeletons, which, for the most part, he prepared himself by maceration, a very unpleasant job. This work he did in a small building on the campus, known as the "bone house," in which he frequently had in process of preparation a number of skeletons, including such animals as a lion, elephant, etc. He also received gifts of numerous specimens of birds, mammals, fishes, etc., some of them only skins and some mounted.

Although his laboratory in old Trumbull Gallery was small and inadequate for his work and the available funds were very meager, he managed to accomplish remarkable results. He not only built up the collections but established a regular course of instruction in zoology and awakened the interest of a number of young men in natural history. One of his very early students, perhaps his first one, was his brother-in-law, Sidney I. Smith, who graduated in 1867, was father's assistant in zoology 1867-74 and was appointed professor of comparative anatomy in Yale in 1875. Among his other students in Trumbull Gallery were Prof. Wm. North Rice, Ph.D. Yale '67, Dr. Thos. H. Russell, '72 Yale S., and Dr. T. M. Prudden, '72 Yale, S. Prof. Rice graduated from Wesleyan in '65 and came to Yale to study under father for his doctor's degree. He then returned to Wesleyan where he was professor of geology and natural history 1867-84, of geology only 1884-1918 and thereafter professor emeritus. He was also acting president of that university for several years. During the summers of 1873 and '74 he worked with father on the U. S. Fish Commission. About 1885-86 he and father planned to collaborate in writing a text book on zoology. Prof. Rice frequently came to New Haven and they both spent much time and labor on the book but other more urgent work on the part of each of them prevented its completion. Prof. Rice, though a sincere and devout Christian and Methodist, was also an eminent scientist and a thorough believer in evolution. He was one of father's closest friends and his gentle and lovable character endeared him to all of us. His own death occurred in 1928. Dr. Russell was a well known and very successful physician and surgeon in New Haven and our family doctor and close friend for many years. In those days doctors used a horse and buggy to make their calls and Dr. Russell's practice was so large that he had to keep three horses as two could not do the work. Dr. Prudden became a very eminent and nationally known

member of the medical profession and was professor of pathology in the College of Physicians and Surgeons, New York.

Father occupied his laboratory in Trumbull Gallery for about ten years, until after North Sheffield Hall was built on Prospect Street in 1874. He was then given a much larger and better room in that building. In 1866 Mr. George Peabody of London had given funds "to found and maintain a Museum of Natural History, especially in the departments of Zoology, Geology and Mineralogy." The original plans called for a central building with two wings, facing on High Street and extending from Elm Street to Library Street. The funds were not then sufficient to build the entire structure and as a suitable building was urgently needed for the rapidly growing collections and for laboratories for the three sciences named by Mr. Peabody, it was decided to at first build only the easterly wing, at the corner of Elm and High Streets, and defer the completion of the rest of the building until the funds had sufficiently increased. The easterly wing was built in 1875. Subsequently the plans were entirely changed, the wing built in 1875 was torn down in 1916 and a new Peabody Museum was completed in 1925 on the former Hillhouse property, at the corner of Whitney Avenue and Sachem Street.

As soon as the wing of the first Peabody Museum was completed father moved from North Sheffield Hall into the new building, probably early in 1876. The Zoological Department, of which he was curator, occupied the third floor of the building. There were two large exhibition rooms for the collections, one for vertebrates and the other for invertebrates. All of the exhibition cases in these rooms and part of those for the Department of Paleontology on the second floor were designed by father and Prof. S. I. Smith. On the third floor there were also two good sized rooms for laboratories, one for father's zoological work and the other for comparative anatomy under Prof. S. I. Smith, and a smaller room for father's study and library. He also had a large room in the basement and one in the attic which were used mainly for storage although some work was also carried on in the basement. Father also used the large lecture room on the first floor of the building for his 8 o'clock recitations in geology and for his lectures on zoology.

His new quarters in the Museum were in every way a great improvement over anything he had had before. The large and well lighted exhibition rooms made possible the display of a great many specimens and the laboratory and private office furnished the necessary room and facilities for the instruction of students, for work on the collections and for his own research work. The improved conditions for work and study and the display of the large collections led to an increased interest and more students in the

zoological department. How many students took that course I do not know but there were a very considerable number, many of whom subsequently became eminent scientists. I particularly remember the following named men who studied under father in North Sheffield Hall or in the Museum, mainly in the latter:

Dr. C. Hart Merriam, 1874-77 special student, Yale; M.D. '79 Coll. Phys. and Surg., N. Y.; Chief, U. S. Biolog. Surv., 1885-1910; Chairman, U. S. Geograph. Bd., 1917-25.

Prof. W. T. Sedgwick, Ph.B. '77, Yale; Ph.D. '81, Johns Hopkins; 1883, Prof. Biology, Mass. Inst. Tech.

Prof. Saml. F. Clark, Ph.B. '78, Yale; Ph.D. '79, Johns Hopkins; 1887, Prof. Zoology, Williams College.

Prof. E. B. Wilson, Ph.B. '78, Yale; Ph.D. '81, Johns Hopkins; L.L.D. '01, Yale, and '02, Johns Hopkins; 1907, Prof. Zoology, Columbia.

Prof. K. Mitsukuri, Ph.B. '79, Yale; Ph.D. '83, Johns Hopkins; Prof. Zoology, Imperial Univ., Tokio, Japan.

Prof. E. A. Andrews, Ph.B. '81, Yale; Ph.D. '87, Johns Hopkins; Prof. Biology, '92 and of Zoology, '08, Johns Hopkins.

Mr. Richard Rathbun, special student and father's assistant Yale; Asst., U. S. Fish Comm.; Asst. and later Director U. S. Nat'l. Museum.

Prof. Westley R. Coe, Ph.B. '92 and Ph.D. '95 Yale; 1902 Prof. Comp. Anat. and '09 Prof. Biology, Yale.

Dr. Willard G. Van Name, B.A. '94 and Ph.D. '98 Yale; Curator N. Y. State Museum; now Assistant Curator Department of Living Invertebrates, Amer. Mus. of Nat. Hist., N. Y.

A number of the above named men acted as father's assistants, either at Yale or on the U. S. Fish Commission or in both positions.

In the Peabody Museum father now had an opportunity to place on exhibition the large collections he had been accumulating since he first came to Yale, about a dozen years before. In the invertebrate exhibition room the large and valuable collections of corals, gorgonias and mollusca were displayed. In this room there was also a life size model of a huge cuttlefish, or squid, over fifty feet long, and another large model of a giant octopus, or devil-fish. Father had written a number of papers regarding these great squids and octopi, had described a number of new species and personally designed these models. The actual work of making them was largely done by Mr. J. H. Emerton, an artist of much ability, who was then father's assistant and who drew the illustrations for many of his papers. Half of the vertebrate exhibition room contained skeletons and the other half mounted mammals, birds, reptiles and fishes. Among the birds was a large case containing a very fine collection of native birds, including a pair of passenger pigeons (now extinct), a wild turkey shot on Mount Tom, Mass. (probably the last one killed in New England), a very fine golden eagle and many

other rare birds. This collection was made by Prof. W. D. Whitney of Yale but I am not sure whether it was given outright to the Museum or only loaned.

After he left Harvard the greater part of father's time was spent in study and original research in invertebrate zoology, mainly marine forms. His first experience in the collection of marine invertebrates was apparently the dredging and shore collecting he did with two classmates in the vicinity of Mt. Desert during the summer of 1860, while he was a student at Harvard. Before then his study of invertebrates had been confined to the dry or alcoholic specimens, mainly corals, in the Museum at Cambridge. He soon became greatly interested in the study of this great division of the animal kingdom, probably because comparatively little research and study had previously been devoted to it and hence it offered the opportunity for much original work and investigation and father was by nature an investigator, always anxious to find out something new.

During the summer of 1861 he and the same two classmates made their voyage, already described, to Anticosti and Labrador but on this expedition there was little chance for collecting marine invertebrates. Due to the illness and death of his father in 1862, he had to spend a large part of that summer in Maine and hence was unable to do any marine collecting until the summer of 1863. During that summer he apparently spent about six weeks at Eastport and Grand Menan, mainly in marine collecting. In 1868 and 1870 father again went to Eastport, accompanied by mother and her brother, S. I. Smith, and perhaps one or more of father's students. During the early years of his professorship at Yale father also did much marine collecting along the shore and by dredging from small craft in Long Island Sound, mainly in the vicinity of New Haven.

During these early collecting expeditions the operations were conducted on a small scale and under many difficulties. The dredges were necessarily small as they had to be manipulated by hand from row-boats or small sailing craft. One such vessel which father used at Eastport was a small sloop owned by Jerry Sullivan, whose main occupation was smuggling goods across from New Brunswick to Maine. This he did at night and during the day rented his boat to father for dredging. Father would tell him where to go and when they got there Jerry, who had been up all night on a smuggling trip, would lower the sails and turn in. The tidal currents, which are very strong in that vicinity, would drift the sloop fast enough for dredging. When through dredging they would wake up Jerry and tell him they wanted to go home. Dense fogs are prevalent there and usually it was so thick that they could see no land after leaving the wharf in the morning. Yet Jerry, who had

been asleep for hours while the sloop was drifting with the tide, never seemed in doubt as to his course and the first object they saw through the fog was generally the wharf from which they started in the morning. Father said that only once did the old man miss his own wharf and that time he made the one next to it and was much chagrined at having made such a mistake.

The U. S. Commission of Fish and Fisheries was created by Act of Congress in 1870 and the following year Prof. Spencer F. Baird was appointed Commissioner. Prof. Baird appointed father as his assistant and placed him in charge of the marine investigations and of all invertebrate collections. The first marine investigations by the Fish Commission were made during the summer of 1871, from Woods Hole, Mass., as a base. Prof. Baird, himself, was there besides father, Mr. S. I. Smith, probably some of father's students and a party from Washington. The operations that first year were on a comparatively small scale. Prof. Baird chartered a sailing yacht of about six or seven tons, for general purposes, and a smaller one for dredging in the immediate vicinity of Woods Hole.

In 1872 Eastport was selected as the base. This year arrangements were made under which the Fish Commission was able to utilize the U. S. revenue cutter "Mosswood" in the dredging operations. She was a small, armed, steam vessel used to prevent smuggling and would now be called a Coast Guard vessel. She carried a small gun on her forward deck and I remember the rifles and cutlasses in racks in the cabin. One feature of the arrangement was that if a suspicious craft should be sighted the dredging must be suspended while the suspected vessel was overhauled and investigated. However, most of the smuggling was done at night and I do not remember that the dredging was interfered with. The use of this vessel considerably facilitated the Fish Commission work that summer.

In 1873 Peakes Island in Casco Bay, near Portland, Maine, was selected as the Fish Commission base. This year a U.S. naval vessel, the steam tug "Bluelight," was placed under the orders of the Fish Commission for the entire summer. She was manned by navel officers and men and her entire time was devoted to the marine investigations of the Commission. With this vessel it was possible to carry on more extensive operations, to extend them further and to use better equipment. In 1874 operations were carried on from Noank, Conn., and in 1875 from Woods Hole, Mass., the "Bluelight" being detailed for the work during both summers.

In 1876, due to the Centennial Exhibition at Philadelphia, the Fish Commission carried on no marine explorations. In 1877 Salem, Mass., was the base but an extended trip was also made to Halifax, N. S., and dredging

and sounding were done in that vicinity. This was made practicable by the detail of a larger naval vessel, the "U. S. S. Speedwell," known as a dispatch boat. In 1878 the base for operations was at Gloucester and in 1879 at Provincetown, Mass., the "Speedwell" being again detailed each year. By this time such marine investigations as could well be carried on during a day's cruise from the base had been pretty well completed and the small naval vessels available did not have sleeping accommodations for a scientific party in addition to the regular crew. A vessel was also needed in connection with the propagation and distribution of fish. Such a vessel, the "Fishhawk," was built and during the summer of 1880 was used for dredging and sounding carried on that summer from Newport, R. I., as a base. Beginning in 1881 Woods Hole was the permanent base for the operations in northern waters during the summers. During the summers of 1881 and 1882 the use of the "Fishhawk" for dredging and sounding was continued but she had been built primarily for use in shallow water in connection with propagation and distribution of fish and was of too light draft and too small for offshore cruises lasting a number of days. Consequently the "Albatross," an ocean-going steamer of about 1,000 tons, was built especially for the Fish Commission work of marine exploration and was in use for the first time during the summer of 1883. Besides being larger and more seaworthy than the "Fishhawk," the "Albatross" had good accommodations for the scientists and much better facilities for doing their work and thus made it possible to make more protracted cruises and to extend them much further from the base.

At Woods Hole a permanent laboratory was secured and eventually was provided with suitable furniture, apparatus and aquariums. Father was in charge of fitting up the laboratory and he and Prof. S. I. Smith designed most, perhaps all, of the furniture, aquariums, etc. Much of this equipment was made about 1885, under his personal supervision, some of it in New Haven. From 1871, when Prof. Baird appointed him as his assistant, father had charge of the marine investigations of the Fish Commission until they were suspended shortly after Prof. Baird's death in 1887. These explorations extended from Newfoundland to Cape Hatteras and from the shore out to depths of about 2,800 fathoms beneath the Gulf Stream. They consisted of soundings, obtaining samples of the bottom, temperature observations at different depths and the collection of zoological specimens from the surface of the sea by tow nets and from the bottom by means of dredges and trawls. In deep water and from the larger vessels the sounding was done with steel wire with self-registering thermometers attached at certain intervals. Similarly the dredges and trawls were handled by steel wire rope and a steam hoisting engine. The dredges were smaller than the trawls and

cut into the bottom so as to obtain burrowing animals as well as those living on the surface of the ocean bottom. The trawls were large, wide-mouthed nets, the mouth, as I remember it, being about twenty feet long and three feet high with the upper side attached to a long beam fitted with runners at each end and the lower side of the net at its mouth weighted with lead so that it swept the ocean bottom. These trawls often brought up large quantities, a ton or more, of fish and various kinds of invertebrate animals, such as starfish, sea urchins, sea fans, sea cucumbers, sea oranges and many which have no English names.

Father, himself, designed and had made many of the appliances used in these marine explorations. He made numerous improvements in the dredges, trawls, etc. and also invented an entirely new appliance, which he called "tangles," for obtaining specimens from rocky bottoms where it was impracticable to use the trawls and dredges. The tangles consisted of an iron frame to which were attached long pieces of raveled out hemp rope. This was dragged over the bottom and starfishes, sea urchins and various invertebrates with rough shells or covered with spines were entangled in the hemp and thus secured. Father described and figured the tangles in 1873 and 1880 and recommended that it be used by oyster men to remove starfish, the worst enemy of the oysters, from the oyster beds. The oyster men adopted the tangles, which they now call a "mop," and it has proved of the greatest value, as it catches the starfish without disturbing the oysters. In fact, in many localities it would be impracticable to raise oysters without using the mops. As now used by the oyster men cotton waste attached to a number of light chains made fast to the iron frame is usually substituted for the hemp rope which father used but the appliance is practically the same.

The primary object of these investigations by the Fish Commission was to obtain comprehensive and detailed information regarding the character and distribution of animal life in the waters adjacent to the northern Atlantic coast and offshore into the Gulf Stream. This information was especially desired with reference to the nature and supply of the food of fishes and consequently with reference to the distribution and abundance of the fishes themselves. To obtain this information required the exploration of the entire region named above to:

- (a) Obtain specimens of the various forms of animal life.
- (b) Determine their abundance or scarcity.
- (c) Determine the temperature of the water and character of the bottom where they lived, which to a large extent control their distribution.

To carry out this plan many thousands of dredgings, soundings and temperature observations were taken and enormous collections of inverte-

brate animals were made from 1871 to 1887, inclusive, except during 1876. It was father's duty to plan the itinerary of the various cruises and to take charge of all collections of invertebrates and supervise the work thereon. For a number of years he usually went out on the vessels himself. Later on his own work at the base on the collections and the supervision of the work of others required so much of his time that he was not often able to go on the cruises.

Owing to the multitude of specimens which were being constantly brought in by the vessels during the summers, it was not possible at the base to do more than roughly sort them into similar groups, preserve them (mostly in alcohol) and put them in condition to be shipped elsewhere for careful study later on. The fishes were sent to Washington and the invertebrates to New Haven, where father continued to work on them during the winters. He estimated that several hundred thousand specimens of invertebrates, comprising two thousand or more different species, were collected from over 3,000 different localities by the Fish Commission from 1871 to 1887, inclusive, and sent to him in New Haven to be worked up. These vast collections had to be carefully sorted, identified, catalogued, labeled and a record kept showing where and when each lot of specimens was obtained, the depth of water and character of the bottom. Among the two thousand or more different species were a large number which were entirely new to science. These new species, many of them belonging to new genera, had to be carefully studied, described and often figured, named and the descriptions published in scientific journals or Government publications.

Father had assistants to do much of the clerical and mechanical work but he did nearly all the scientific work himself, identifying the specimens of the various known species and preparing over a hundred articles for publication, giving the results of the Fish Commission investigations and descriptions and figures of the new species discovered.

As partial compensation for this work and for his work while the collections were being made, Prof. Baird agreed that after the first set of specimens, containing all the type specimens and any unique forms, had been sent to the National Museum, the first set of duplicates should be given to father as his personal property. Other sets of duplicates were to be given to the American Museum, New York, to the Museum of Comparative Zoology, Cambridge, and to other institutions. This division of the collections into the various sets was in itself a big job. Of course father's work on the Fish Commission collections had to be done when he was not engaged in his duties at Yale, where he was giving instruction in both zoology and geology and was curator in charge of all zoological collections. Because of the tre-

mendous amount of work he did on the collections and because his college and other work also took a large part of his time, it was not until 1908 that he practically finished working up the Fish Commission collections and, except for his own set of duplicates, sent them to Washington. In that same year he sold his set of duplicates to Yale University, where they now form part of the collections of the Peabody Museum.

During the time father was connected with the U. S. Fish Commission or working on its collections, he wrote and published about a hundred scientific reports, papers and articles regarding the investigations of the Commission, the methods employed, results obtained and descriptions and lists of the invertebrate animals collected, including a hundred or more new species. Many of these publications were in the form of government reports but many others were published in the American Journal of Science, Transactions of the Connecticut Academy of Arts and Sciences and other scientific journals.

During the years he was connected with the Fish Commission father was not contented to devote himself entirely to that work. As far back as I can remember he always had several different pieces of work in progress at the same time. He would start an article or report in one branch of zoology and before finishing it would often begin several other articles on other subjects, temporarily dropping the first one. He said he became tired of working on one subject continuously and could do better work by dropping it for a time. This method of work sometimes resulted in some of his papers being delayed and some never being finished.

From 1872 to 1884, inclusive, in addition to his Fish Commission work he was also working and writing on other collections and published about fifty papers not connected with the Fish Commission work. These papers included reports and articles on six or more different collections. The largest such report was on the anthozoa and cephalopods dredged by the U.S. Coast Survey Steamer "Blake" under supervision of Alexander Agassiz. He also published articles and reports on collections made by the Canadian Government under supervision of J. F. Whiteaves; by the Howgate Polar Expedition, 1877-78; by the U. S. Coast Survey Steamer "Bache" under supervision of S. I. Smith and O. Harger in 1872; by the U. S. Geographical and Geological Survey of the Territories, 1872-74; and by Dr. J. H. Kidder at Kerguelen Island, 1874-75.

About 1874 father became greatly interested in the discovery of the occurrence of gigantic cuttlefish in the waters off the coast of Newfoundland. He at once began the study of these huge animals which grow to a length of over fifty feet, the largest living invertebrates known to science. As a

result of his investigations he published, 1874-97, twenty papers on cephalopods, including cuttlefish, squids and octopi, or devil-fish. These papers ranged in length from a single page to a complete monographic treatise in two parts describing all the species known on our coast. Some of these papers related to collections made by the Fish Commission and two were on collections made by the U. S. C. S. Steamer "Blake" but more than half of the papers were exclusively on the giant cuttlefish of the north Atlantic.

From 1886 to 1890, father was a member of the editorial staff of Webster's International Dictionary in charge of all matters pertaining to zoology. He contributed all the zoological and most of the palaeontological matter and selected and supervised the preparation of the illustrations for those two departments and some in other departments. Many of the illustrations, especially the zoological ones, which had been used in previous editions of the dictionary were not satisfactory and some were misleading, so it was necessary to replace nearly all of them with new ones and to much increase the total number. To supply new and satisfactory illustrations was, in many cases, difficult. Some were borrowed from other publications, but many of these had to be reduced in size or partly redrawn. Many new illustrations were prepared from photographs of specimens in the Peabody Museum and in a number of cases father had me procure new specimens of birds, mount them and then had photographs and cuts made of them. Many of the illustrations which father supplied at that time are, I think, still in use. In addition to the work on the illustrations, he spent a great deal of time in writing the definitions and looking up new words. This work on the dictionary could not be deferred as the publishers were very anxious to have it completed and on sale. Hence, for several years, he spent a large part of his time on this work and published very few scientific papers, I think practically none, for about five years.

Having completed his work on the Dictionary, father again plunged into his technical work on invertebrates and between 1890 and 1900 he wrote and published about twenty papers. Of these papers, five were on echinoderms, mainly starfish and brittle stars, and six were on mollusca. Two of the papers on mollusca were prepared jointly by father and his assistant, Miss K. J. Bush, Ph.D. During the latter part of this same period he also devoted a very considerable amount of his time to work on the Supplement to the Dictionary, which was published in 1900.

During the spring of 1898 father spent a number of weeks in the Bermuda Islands making collections and studying the zoology, geology and botany of those islands. Accompanying him and aiding in making the collections were three of his Yale students, C. M. Cooke Jr., Wm. E. Porter and my

youngest brother, C. S. Verrill. In the spring of 1901 he again visited the islands, being accompanied on this second trip by my mother and my brother, A. Hyatt Verrill, who not only helped in the collecting but also made numerous colored drawings of many of the specimens and about 200 photographs of zoological and geological subjects. On this trip Dr. W. G. Van Name, now connected with the American Museum, New York, was with them for a short time. During these expeditions to the Bermudas father, with the aid of his assistants named above, made large zoological collections, very carefully studied the geology and botany and became intensely interested in everything pertaining to the Bermudas. As a result, for about ten years from the time of his first visit, he devoted a very large part of his time to working and writing on subjects pertaining to these islands. Altogether he published over 25 books and papers on the Bermudas, all but two of which were published from 1900 to 1908, inclusive. These publications varied from a single page to a bound volume. This book, "The Bermuda Islands," Vol. I, Parts 1, 2 and 3, his largest single publication, was mainly written for popular use, it was quite widely distributed and gave an account of the scenery, climate, productions, physiography, natural history and geology, with sketches of the discovery and early history of these islands and the changes in their flora and fauna due to man. Part 4 covered the geology and paleontology and Part 5 gave an account of the characteristic life of the coral reefs. His last two Bermuda papers were on crustacea and were published in 1922 and 1923.

During the next 18 years, 1909 to the time of his death in 1926, father published about twenty scientific papers. Eight of these papers were on starfishes, two being large volumes, viz.: "Monograph of the Shallow-water Starfishes of the North Pacific Coast", in two parts, Part I., published by the Smithsonian Institution, and "Report on the Starfishes of the West Indies, Florida and Brazil," published by the University of Iowa.

Father believed it to be the duty of a scientist, particularly of a zoologist, to publish the results of his studies and investigations for the benefit of other scientists and the World in general. He conscientiously followed out this belief. His first scientific paper* was published in 1861, when he was about 22 years old. During his lifetime he published in scientific journals or as separate volumes over 300 technical articles and papers, aggregating nearly, if not fully, 8,000 pages, illustrated by over 800 plates and numerous text cuts. These papers covered a wide range of subjects, in fact I think there is no branch of the animal kingdom on which he did not publish something.

*"Notice of the discovery of tin-ore, chrysoberyl and other minerals in Maine." Proc. Boston Soc. Nat. Hist., vol. 7, p. 423.

He was also a keen student of botany, geology and mineralogy and published a number of papers on these subjects. Marine invertebrates were his specialty and the subjects of most of his publications but unlike many men who are interested in this branch of zoology he did not confine himself to a few groups but studied and wrote on every known group. He also, particularly in his early life, did much work on vertebrates and published at least 40 papers on this group, mostly on birds but also on mammals, reptiles, batrachians and fishes.

In addition to these above described papers published in scientific journals and as separate volumes, father wrote a large number of newspaper articles, many of them on scientific subjects, written in popular form, but some of them on entirely different subjects. Some of these articles were published in the New Haven papers, others in New York, Philadelphia and various other newspapers. He left no record regarding most of these articles and I greatly doubt if he, himself, could have given even an approximate list of them. The first I remember were a series for "The Hearth and Home," probably written in the early 70's. They were on subjects of interest to farmers and I think pertained to the various parasites of domestic animals, the laws regarding the reproduction of cattle and similar agricultural subjects.

Among his papers I found a few clippings containing some of his articles. One from "The New York Times" of October 29, 1882, entitled "Life in the Gulf Stream," gave a very interesting account of the results of the investigations of the U. S. Fish Commission during 1880-'82, inclusive. After the eruption of Mt. Pelee, Martinique, in 1902, there was much discussion in the public press concerning the various phenomena observed and the cause of the great loss of life. Father presented an entirely new theory regarding what took place, which was published in "Science" and "The Press" of Philadelphia. His theory was that the sea water, suddenly coming in contact through a fissure in the side of the volcano with the intensely heated lava within, was decomposed into its component gases. That these gases were then ejected from the volcano with great violence and much of the hydrogen and oxygen reunited in the air above the crater, causing tremendous explosions and the lightning-like flames described by observers. The salt (sodium chloride) in the sea water would also be decomposed by the intense heat and the free chlorine, after ejection, would unite with some of the hydrogen, forming hydrochloric acid, which would quickly kill everything not killed by the explosions. This theory accounted for the violent explosions, the appearance of flames over the crater, the sudden death of so many people and the large amount of mechanical damage and was quite generally accepted as the correct explanation of the phenomena observed.

After father visited the Bermudas he contributed several articles to "The Royal Gazette," published there. Although formerly oranges and lemons were largely grown and exported from these islands, at the time father was there very few were raised because of the prevalence of scale insects. In some of his articles he explained how this trouble could be overcome and how oranges and lemons could again be made profitable crops. Whether or not this advice was followed I do not know.

In 1905 there was an outbreak in New York of "spotted fever" (cerebro-spinal meningitis of a certain type) which caused many deaths and much discussion arose as to its cause and how it was transmitted. Father advanced the theory that this disease, and probably a number of others, were transmitted by biting insects. His articles on this subject were published in "The New Haven Register" (March 16 and 23, 1905) and elsewhere and caused considerable discussion. A number of medical men agreed with his conclusions but some ridiculed the idea. It is now well known that this disease is transmitted by the bite of infected ticks and that various other diseases are caused by biting insects; bubonic plague by fleas, "sleeping sickness" by an African biting fly, yellow fever by mosquitoes, typhus by lice, etc.

His latest newspaper articles of considerable length were written during the summer of 1914 for "The Norway Advertiser" and consisted of a series of 25 articles entitled "Recollections of Early Settlers of Greenwood," and two other articles, "Greenwood City in the Forties" and "Norway in Scientific Literature." The last gave an account of articles by ten or more scientists on the fauna and flora found in the vicinity of Norway. The other 26 articles, are very interesting and contain information of much historical and genealogical value and describe many old customs and beliefs now, for the most part, forgotten. They should be reprinted in such form as to be readily accessible.

In addition to the 300, or more, scientific papers already referred to, he also completed, ready for publication, three other papers; had two more nearly ready, and had done much work on several others. The three completed papers were:

Report on the Higher Crustacea of Connecticut and Adjacent Waters.

Deep-Sea Alcyonaria of the Blake Expeditions. 2 quarto vols. with about 150 plates, many colored.

True Nature Stories for Boy Scouts and other Boys. About 300 pp. and many text cuts.

The first-named paper, one of the longest and most important he ever wrote, was one of a series of reports by specialists to the Connecticut Geological and Natural History Survey on the fauna, flora, geology and mineralogy of the State. It was submitted for publication in 1919, but was never

published. The reason given was because it was much longer than most of the reports and hence its cost of publication would have been considerably above the average and the available funds were limited.

The second paper completed but not published, father always considered his most important work. This large report on the Alcyonaria collected by the expeditions made under the supervision of Mr. Alexander Agassiz.

The third paper, completed but unpublished, was intended to stimulate in boys an interest in natural history, particularly in zoology. It was written in popular form and gave many interesting facts regarding animals and their habits. This book I published myself.

The two papers which were nearly ready for publication were:

The Decapod Crustacea of Dominica Island. About 200 pp. and 30 plates.

Hawaiian Shallow Water Anthozoa. About 30 pp., 5 plates and 3 pp. of cuts.

The first of these papers required considerable work before it would be ready for publication. Dr. W. G. Van Name very kindly looked over the paper and suggested it be deposited with some scientific institution until some competent person could be found who would undertake to prepare it for publication. I was very glad to adopt this suggestion and deposited the manuscript with the American Museum of Natural History. I understand that up to now nobody has been found competent and willing to finish this paper but it is hoped that eventually it may be published.

The second paper, on Hawaiian Anthozoa, was the last paper father wrote. In it he described 2 new families, 5 new genera and 21 new species of Alcyonaria. Some of the specimens on which this paper is based were in the collections of the Bernice P. Bishop Museum, where they were studied by father; some he collected himself on the island of Kauai, 1924-'26; and some were collected on other Hawaiian islands by Dr. C. M. Cook, Jr. and others. This paper was not entirely ready for publication and the Bernice P. Bishop Museum very courteously offered to have it prepared for publication and published. Prof. Chas. H. Edmondson, who had already helped father in collecting specimens, in his studies and in preparing photographs for some of the illustrations for it, very kindly completed the paper and it was published in 1928 as Bulletin 49 of the Bernice P. Bishop Museum. The three pages of cuts are all reproductions of drawings made by father, himself, the last scientific drawings he made. The five plates are halftones from photographs, most of which I think were made by Prof. Edmondson.

In addition to the five papers, named above, which were ready, or nearly ready, for publication when he died, father also left many notes, manuscripts and drawings from which he had hoped to prepare papers on various groups of marine invertebrates. This material I gave to the American Museum of

Natural History in hopes that it may be used by persons working on the groups to which it pertains.

In addition to his work on scientific papers, father, with his brother, G. W. Verrill, devoted much time to the genealogy of the Verrill family and that of my mother. An account of this genealogical work is given in the FOREWORD hereof and all information in this paper which antedates father's death in 1926, except some additions and corrections by Harold F. Round and a small amount from my own memory, is from the data left by father and his brother. Besides a draft of a paper on the family genealogy which father expected to publish, he also left an immense amount of notes, correspondence, photographs and data of various kinds concerning both his own and my mother's families. Much of that which pertains to our immediate branch of the Verrill and Smith families I have utilized in this paper. The rest, largely pertaining to other branches of the family, I shall leave with the hope that some day some member of the family will be able and willing to put it in shape and publish it.

In addition to his numerous publications father gave many lectures on zoological and geological subjects. During his active work as Professor of Zoology at Yale he gave regular lectures on that subject to all students in the Scientific School, except those taking courses in engineering. From 1867-'70 he was Professor of Entomology and Comparative Anatomy in the University of Wisconsin and each year gave a course of about a dozen lectures there on those subjects as applied to agriculture. In 1868 he lectured before the Connecticut State Board of Agriculture. In 1872, and probably in other years, he gave a series of lectures at a school for young ladies kept by Miss Sarah Porter at Farmington, Conn. For a number of years a series of lectures, called the "Mechanics' Course," was given each year in New Haven by members of the faculty of the Scientific School. They were open to the public without charge and were largely attended. Father usually gave one or more of these lectures each year. Twice he was appointed to give lectures before the Lowell Institute of Boston. The last time he was thus honored was in 1899, when he gave a course of six lectures, illustrated by lantern slides, on the natural history and geology of Bermuda.

Father first became interested in natural history, when about ten years old, by collecting minerals and later by studying mineralogy and geology. The first paper he published (in 1861) was regarding his discovery of tin-ore, chrysoberyl and other rare minerals in Maine. Although in later years he made zoology, particularly invertebrate zoology, his specialty, his interest in geology and mineralogy continued as long as he lived. Wherever he went he was always observant of the geological features and formation and on the

lookout for unusual minerals. Although his professorship in Yale was in zoology, he also gave instruction in geology for 24 years (1870-'94) to the senior class in the Scientific School. Before he was appointed a professor at Yale he began to put his knowledge of geology and mineralogy to practical use by examining and reporting upon existing and prospective mining properties, mainly iron and coal. He continued to do this work, whenever it was offered, for about 20 years, until his college duties and zoological research work required all of his time and attention. He was not only an expert geologist but was also entirely familiar with the process of extracting iron from the ore and the manufacture of steel and his reports were based on a study of the manufacturing and financial as well as the mining and geological outlook. Hence his work was very successful. I have heard him say that he had saved his clients more money by reporting adversely on property they contemplated buying than he had made for them by advising purchasing and that no property on which he had reported adversely had ever proved valuable. He carried on this mining work in New Hampshire, New York, Vermont, West Virginia, Virginia, North Carolina and perhaps other states.

I have often thought that had father devoted his life to mining and geological work, including the examination of prospective oil fields, he would probably have been more widely known. However, he did the work he liked best and was happy in doing it, which after all is the main thing, and he gained a world wide reputation in his own chosen field of science.

As I am not a zoologist I am not qualified to evaluate father's work in that branch of science but others who are qualified have done so. At a meeting of the President and Fellows of Yale University on December 11, 1926, the Secretary was directed to send me a copy of the following resolution, viz.:

"Voted, to record the sorrow of the President and Fellows at the death of Addison Emery Verrill, for sixty-two years a member of the Yale faculty, a scholar whose work brought him and the University international recognition, and whose teaching influenced the lives of many generations of students."

"The New York Times" under date of December 11, 1926, quotes President Hadley of Yale as speaking of father as follows:

"He is the last of the great scientists who were responsible for the great development of Sheffield Scientific School. His entire life was marked by zealousness in scientific work which was almost unsurpassable and which was often carried on at great detriment to himself. He was indefatigable in his researches."

Prof. Wesley R. Coe, who was one of father's students and subsequently was Professor of Biology at Yale and hence is well qualified to judge of father's work, has written four accounts of his life and contributions to science, viz.:

Addison Emery Verrill; Pioneer Zoologist. *Science*, vol. 66, 1927, pp. 28-29.

Addison Emery Verrill and his contributions to zoology. *Amer. Jour. Sci.*, vol. 13, 1927, pp. 377-387.

Addison Emery Verrill: the life and work of Yale's first Professor of Zoology. *Yale Alumni Weekly*, vol. 36, 1927, pp. 1053-1054.

Biographical Memoir of Addison Emery Verrill, 1839-1926. National Academy of Sciences of the United States of America, Biographical Memoirs, vol. XIV, second memoir. Presented to the Academy at the autumn meeting, 1929.

During his student days, perhaps earlier, father was troubled by what he then called "colds" and later "hay-fever," which was really caused by his being allergic to feathers and summer pollens. His only relief was sleeping on hair or rubber pillows and spending the summers at the seashore. To be in town for a few days brought on all the symptoms of a severe cold and made it impossible for him to accomplish any work. His connection with the U. S. Fish Commission required that he spend the summers at the seashore, where he had little or no trouble, but after he resigned from the Fish Commission he had to find some place where he could have a summer home at the shore. Hence, in 1888 he leased one of the Thimble Islands, in the town of Branford and about 12 miles to the eastward of New Haven. This island, known as Big Pumpkin or Davis Island, lies about half a mile offshore from the village of Stony Creek, is of good size, higher than most of the group and well covered with trees. On the island were a comfortable, two-story dwelling, a store house and a boat house with a small, well sheltered harbor and boat landing. Here father and his family spent the summers of 1888 and 1889. The Thimble Islands proved to be so well suited to father's requirements, he having no hay fever there and the islands being easily accessible from New Haven, that he decided to make them his summer home. In 1889 he purchased the outermost island of the group, known as Two-Tree or Outer Island, about 2½ miles from shore.

Outer island is about six acres in area and its highest part is less than thirty feet above sea level but, for the most part, its perimeter consists of solid granite ledges sloping up from the sea and forming a natural protection from wave attack. On its northerly side, facing adjacent Horse Island, is a small cove and beach which father improved and made into a good bathing beach. To the eastward of and adjoining this beach father made a very good harbor, separated from the beach by a stone landing pier and protected from easterly seas by a stone breakwater, both structures being built of stone obtained from the island. When father bought the island there was no evidence that anybody had ever lived there. It was covered with a dense, almost impenetrable, growth of sassafras, sumac and poison ivy. There were also a number of red cedar trees, a good sized basswood, a

hickory and several small pines. There had been two tall pines on the island which showed up above everything else and gave it the name of Two-Tree Island. These had both been blown down or struck by lightning before father bought the island, but the stump of one was still standing near the westerly end of the island with the trunk lying on the ground beside it.

Before building a house and making the island habitable, it was necessary to clear away a lot of the dense undergrowth. This task father gave to a very reliable negro, named Henry, who had worked for us for several years. Henry had a small shack on the island and lived there for several months until he had cleared away much of the underbrush and poison ivy. Father then let the contract for building a good sized boat house and storehouse and the summer dwelling. While doing this work the contractor and his men lived on the island except over the week ends. Father designed the house himself and I drew up some of the plans. It was a 2½-story, frame house with a cellar and was located near the southerly end of the island, on nearly the highest ground. As it was in an exposed position father had it built very strongly. The timbers were much heavier than it is customary to use in houses ashore and the frame was all joined together by mortise and tenon joints with hardwood trenails, the joints being also strengthened by diagonal braces. The outer covering was vertical tongue and groove sheathing, part of which was later covered with shingles. There were upper and lower verandas on three sides of the house. On the first floor were a large living room, father's study, dining room and kitchen. There were open fireplaces in father's study and the dining room. On the second floor were five bedrooms, including the maid's room over the kitchen. The attic, which was well lighted and very comfortable, was much used for additional sleeping accommodations and also contained a good storeroom. In the rear of the house, and connected therewith, were a wood-shed, an engine and pump-house and a toilet. Rain water was collected in two large underground cisterns and at a short distance from the house was a well which never ran dry and furnished excellent drinking water. The cistern water was mainly used in the kitchen, for laundry work and, after a few years, for the toilet. At first water was obtained from the cisterns by hand pumps but subsequently it was pumped up into a large, elevated wooden tank by a gasoline engine and thence fed by gravity to the kitchen and toilet. Driftwood, of which there was always a good supply, furnished fuel for both the kitchen range and the fireplaces. The gasoline engine used for pumping water also ran a circular saw for cutting up driftwood and in later year operated a washing machine.

When father bought the island it had no good harbor and one of the first things he did was to make one by constructing a stone pier and break-

water. These formed a very good harbor which was later dredged out and made considerably deeper. He also built ways on which larger boats could be hauled out and stored over winter in the boat-house, which faced on the harbor. We always kept several boats; one 25-foot launch, originally steam and later gasoline driven, a smaller motor boat, several rowboats and, at times, one or more sailboats.

Father was always very fond of flowers and gardening and the island offered an excellent opportunity, of which he took full advantage, to indulge in this fascinating hobby. Having been so long uncultivated, the soil was very good, much being leaf mold, but during the winter the heavy seas brought enough salt, in the form of spray, onto the island to interfere with growing some kinds of plants and trees. High winds carried this salt spray over large parts of the island killing or badly injuring some kinds. Other kinds were largely or quite immune. However, father found by experimenting which plants and trees would grow there best and as long as he owned the island he always had an abundance of flowering plants, a good vegetable garden and many fine trees. He also planted much shrubbery and many vines. Honeysuckle vines covered much of the house, various trellises and ran wild over many of the ledges. Grape vines covered the well house and part of the dwelling and bore many grapes. The shrubs which did best were Japanese roses and California privet, both of which formed thick hedges and the roses bloomed profusely. There were over fifty different kinds of trees, among them being: apple, pear and crabapple trees; various kinds of spruces, pines and other evergreens; cottonwoods, linden, elms, bronze beech, etc. Among the flowering plants German and Japanese iris, tiger lillies, lillies of the valley, day lillies, primroses and Indian blanket flowers did particularly well. There were also many native wild flowers, the yellow dogtooth violet and bloodroot being very abundant early in the spring.

In addition to the stone pier and breakwater, father built numerous stone and concrete walls for protection against heavy seas and, in some places, to act as retaining walls. All material for these walls, except cement, was obtained from the island and father himself took a very active part in the work as well as in the gardening. He also did much in the way of carpenter work and, with some aid, built a small 3-room cottage near the bathing beach. There were many visitors at the island, often five or six besides our own family, and this cottage was much used when all the rooms in the large house were occupied. In later years a man and his wife were employed for housework, gardening, etc. and occupied the cottage.

The heavy, physical work which father did at the island was very remarkable. All during the winter he was engaged in his scientific work,

taking practically no physical exercise, but when he went to the island he dropped his scientific work and at once began physical labor and seemed to enjoy it. This he kept up even during the summer of 1926, before his death in December of that year. His physical ability was wonderful, especially for a man whose occupation during most of his life was largely sedentary.

Father, mother and my sister Edith spent most of the summer of 1914 in Norway, Maine, visiting mother's youngest brother, Clarence, and his wife and many old friends whom my parents had known when they, themselves, lived there. While in Norway mother became seriously ill and went to Portland for medical treatment. After a long illness she died in Portland on January 25, 1915. Father and Edith were with her throughout her illness and the nervous strain while she was sick and the shock caused by her death were very hard on father and brought on very severe neuralgia and various troubles. After mother's death father made his home with my wife and me, but for a while he had to spend much time at 86 Whalley Avenue packing up and taking away many things preparatory to leasing and subsequently selling the property. Edith was married in Norway on July 7, 1915, and father went to Maine with her and remained there the rest of that summer, returning thereafter to live with us. He was still suffering much from neuralgia and his general health was not good. It seemed to me that he needed a change of environment and something to change the current of his thoughts. Consequently, in December, 1915, I persuaded him to take a trip to Bermuda with my wife and me. We were there about three weeks, spending most of the time in walking and driving about the island and sailing and rowing on the surrounding waters. Father had spent several months there in 1898 and 1901 making collections and studying the fauna, flora and geology of the islands and had written much about them. Hence, this last visit took him back to well known places and enabled him to renew old friendships and acquaintances. Although the trip was supposed to be simply a vacation, father could not resist the urge to collect scientific specimens and before we left had quite a collection and making it helped to divert his mind and take his attention. Taken all together the effects of the trip were very beneficial and his health and mental attitude were greatly improved.

Early in 1916 my station was changed from New Haven to New London, but father and my family continued to live in New Haven until about July 1 and then went to the island, where they spent the summer, joining me in New London that fall. Father spent a portion of the next summer at the island and part with us at New London. I was assigned to active military duty in October, 1917, and left for my station at Fort Yellowstone the latter part of that month, my family staying in New Haven and father at the

island for several weeks longer. In December, father went west with my family and visited his sisters, Nellie and Hattie and his brother Edgar in Carson City and San Francisco and his son Clarence in Vancouver, B.C. Later, on May 4, 1918, he joined me and my family at Fort Yellowstone, where he remained until September, when I was ordered to New Haven. Father had never before been west of Wisconsin and his trip to the Pacific coast was of much interest to him as well as affording him the great pleasure of visiting his sisters, brother, son and their families. The great difference between the mild climate of California and that which he had been accustomed to in New England made a great impression on him. One day he was seen sitting on the ground in Golden Gate Park and when asked why he said he wanted to be able to say he had sat on the green grass in January.

His visit to Yellowstone Park was particularly interesting to him and he spent practically all of his time studying the fauna, flora and geology. He devoted much time to the plants and trees, identified all that he found, kept a list of them and a record of when they first blossomed. He wrote a considerable portion of a paper on the botany and zoology of the Park, mentioned by Prof. Coe on p. 66 of his Biographical Memoir for the National Academy. He was surprised and pleased by the lack of fear of man shown by the elk, deer, bears and other animals in the Park. An old bear and her three cubs that were around the fort and a big male bear that used to come each night under his bedroom window, dodge the sentinel and empty the garbage can interested him very much. The geysers, hot springs and other natural phenomena took much of his attention and he spent many hours in long walks around Mammoth Hot Springs, near the fort.

We left Fort Yellowstone on September 1, 1918, and returned to New Haven. In May, 1924, I went to the Hawaiian Islands to take charge of the construction of a breakwater for the U. S. Engineer Department at Nawiliwili, on the island of Kauai. Father and my family spent the summer on Outer Island and joined me the following November. In Honolulu they spent a day with Dr. C. Montague Cooke and his family. Dr. Cooke was a scientist connected with the Bernice P. Bishop Museum in Honolulu. He had been a student of father's at Yale and had gone with him to Bermuda in 1898. Later father visited the Cookes in Honolulu and with them went to the island of Maui, where they also had a residence. As there were no houses for rent near the work, I was authorized to have one constructed. It was located in a grove of lantana, wild plum and guava trees. It was a few feet from the shore and directly across the harbor from the work.

Father greatly enjoyed the time he spent in the Hawaiian Islands, the delightful climate, neither too hot nor at all cold, always a breeze, plenty

of sunshine and never any fog. He was free from hay fever and in better health than for some time. The entirely different fauna, flora and geology opened new fields of study for him and there was an unlimited chance for him to exercise his skill and experience in gardening. He procured cuttings from various places on Kauai and soon had a number of hibiscus, poinsettias, and various other shrubs growing finely and vines covering one side of the house. In addition, he planted many seeds of flowering plants and of various vegetables. Nearly everything did well, even things which were said could not be successfully grown owing to the Mediterranean fruit fly. Tomatoes were one of the fruits which it was considered almost hopeless to raise, yet he had some very fine ones and also an abundance of egg plants. He had quite a number of papaya plants, or trees, which he raised from seeds and which gave us plenty of fruit. He also planted some banana suckers and when we left, there was a fine bunch of fruit on one plant but not quite ready to cut. He even set out some young coconut palms, but of course they were still very small when we left.

Although father spent much time in the garden, he also did a large amount of scientific collecting and writing. Near the house and at the base of a high volcanic cliff, there was a shelf of the same rock at a little above low tide level. At low tide he used to go out on this rocky shelf and collect marine specimens from the tide pools. He also arranged with a young man living in Honolulu to collect for him in Pearl Harbor. As a result of the collections he made himself and that done under his direction and the study he made of the collections in the Bishop Museum, he wrote the paper on Hawaiian shallow Anthozoa which was published by the Museum.

The breakwater being completed, we left Kauai on April 11, 1926 and arrived in New Haven on May 11, 1926. We made the trip from Honolulu to New York on the U. S. Transport SAINT MIHIEL, via the Panama Canal. This gave us an excellent opportunity to see the canal and get a glimpse of the tropics. As the ship stopped for a day at Panama, we spent the night ashore at the hotel and had time for an interesting drive around the city and its environs. By a curious coincidence, we had a very pleasant but unexpected meeting with my brother, A. Hyatt Verrill, and his wife at the hotel. They had arrived from Peru the previous day.

After a short stay in New Haven, we all went to Outer Island for the summer; but early in August I accepted a position to take charge of the construction of a municipal pier at Monterey and later of a breakwater at Santa Barbara, California. I left soon after, but the family remained there until late in the season and in November came to Santa Barbara.

Father worked hard putting things on the island in shape for the winter and became very tired. Before leaving New Haven, he had some digestive

troubles and was not well. Before starting west, my wife consulted a physician who examined father and said he thought it would be safe for him to make the trip. However, his health did not improve as the doctor had expected, but instead grew worse. Nothing could be done to overcome the effects of his advanced age and his death came peacefully on December 10, 1926. He was interred in the family lot in Evergreen Cemetery, New Haven, beside my mother.

Father states in his diary that on October 12, 1860, when he entered the Harvard gymnasium, he was 5'-9½" tall and weighed 146½ lbs. Although while at Harvard his health had not been good, it became excellent after going to Yale. During middle life he was rather stout, weighing about 180 lbs. In his later years, his weight was considerably less, but his health was good and he continued remarkably strong and active for a man of his age until the time of his last illness.

Father's eyes were blue and the original color of his hair was rather light brown, but his mustache was reddish. Like that of most Verrills, his hair began to turn grey quite early in life but he had plenty of it as long as he lived. He used to say that nobody ever saw a bald-headed Verrill. In his latter years his hair was almost snow white and worn rather long, which gave him a striking appearance. As a young man, father was quite erect but as he grew older he became more and more round-shouldered, though there was no apparent reason for it. The large amount of microscopic work and writing which he did may have been, in a measure, responsible. He was quite short-sighted, so much so that he would often pass a friend, or even a member of his family, on the street without recognizing them. Nevertheless his eyesight was remarkably keen for objects near by.

Father had a remarkably good disposition. Though he had a temper, he kept it under control so that only a very few times did I see flashes of it. No children could have had a better father than did we, always affectionate, kind and ready to help us in any and all ways, not only as children but after we were grown.

His zoological work was not simply a profession but a most interesting and important duty to which he devoted his life. It was rare that he spent any time for the usual recreations and relaxations which most men consider necessary. Until he had a summer home at the Thimble Islands, what little recreation he took was usually in the form of gardening and walks or drives out into the country to see the birds and wild flowers. From these excursions he always brought home native flowering plants and ferns to set out in the garden. He had nearly all the native ferns and many kinds of the flowers, such as: several kinds of lady's-slipper (*cypripedium*) and other orchids,

various kinds of violets, blue, yellow and white; azaleas; bloodroot; liverwort; two kinds of anemones; jack-in-the-pulpit, etc. Father was an excellent botanist and knew the scientific names of all the native plants and trees. Wherever he lived he always had a beautiful garden.

After he bought Outer Island, he used to begin going down there for a day or so at a time quite early in the season to plant the gardens and get things ready for the summer. Usually the family moved down about the first of July and stayed there until well into the fall, often into November. Father was a good oarsman and would often row the couple of miles between the island and the shore at Stony Creek, although ordinarily the trip was made in a motor boat. He was also a very good swimmer and often went for a swim. At the island, he was constantly doing various kinds of work, such as gardening, building concrete and stone walls for protection against the sea, clearing the harbor and bathing beach of large boulders by means of scows built for the purpose, working on the boats, etc. For a number of years, one or more of his sons and often some of their friends were there to help with the work. Later, after the boys left home, he hired a man to help him.

Father's moral character was of the very highest; absolute honesty and truthfulness being first and foremost in everything he did, said or wrote. Like his father and grandfather he was a strong believer in temperance. It was very seldom that he would even drink a glass of beer or wine. Neither did he use tobacco in any form, but he made no objection when all three of his sons began to smoke. He was also strongly opposed to profanity. I never heard him utter an oath, but under extreme provocation and on rare occasions I have heard him say "The Devil." His speech was, however, remarkably free from expletives.

Father was not a member of any church but he often attended college chapel with my mother and me. The first chapel we thus attended was in the "Old Brick Row" in the middle of the campus. After that building was torn down, we had a pew in Battell Chapel, now standing. Like most scientists, father was a firm believer in evolution but he was by no means an atheist. While he did not take everything in the Old Testament as literally true, he thoroughly believed in a Supreme Being, or Power, who created the universe and made the laws which regulate it.

One of father's strongest characteristics was his remarkable memory. He could identify at sight and give the Latin names of thousands of marine invertebrates and also of many birds and other vertebrates. He also knew the identity and Latin names of nearly all the native trees, flowering plants and ferns; could name most of the various rocks and minerals and knew their chemical compositions. This ability to store away in his mind information,

facts and names and to have them available when needed was very marked in other than scientific lines. He would often tell of something he had read or been told years before and which most people would have forgotten entirely.

When father graduated from Lawrence Scientific School of Harvard in 1862, he received the degree of B.S. and in 1867 he was given the honorary degree of M.A. by Yale. Except for membership in a zoological society among Prof. Agassiz's students, the first scientific organization to which he belonged was the Boston Society of Natural History of which he became a member on May 2, 1860 and curator of corals and echinoderms 1864-74. In 1873 he was elected a member of the National Academy of Sciences, which is considered a high honor. He was made an honorary member of that body November 24, 1924. The following is a partial list of his connections with other scientific societies, viz: fellow of the American Association for the Advancement of Science; associate fellow ('87) of the American Academy of Arts and Sciences; honorary member ('88) of the California Academy of Sciences; corresponding member of the Société Zoologique de France and of the Wisconsin Academy of Science, Arts and Letters; correspondent of the Academy of Natural Sciences of Philadelphia; member of the Connecticut Academy of Arts and Sciences and president thereof for many years; Member of the New York Academy of Sciences; the Essex Institute; the American Society of Naturalists; American Society of Zoologists; American Morphological Society; American Museum of Natural History; honorary member of the Committee of Organization of the Fifth International Congress of Geologists (1891) and of other scientific organizations. From 1869 to 1920, he was associate editor of the "American Journal of Science" to which he contributed many articles. In 1865 he was made an honorary member of Berzelius, a society of which the active members were undergraduates of the Sheffield Scientific School of Yale. He also was a member of the Graduates Club, a social organization in New Haven.

Father and mother were married on June 15, 1865. They had six children, all born in New Haven, Conn., viz:

1. George Elliot, b. July 29, 1866, graduated Ph.B from Yale 1885. Civil engineer, Major in Army in World War I, practiced profession in Peru, S.A., and Hawaiian Islands as well as Connecticut, Massachusetts, Rhode Island, New York, New Jersey, Virginia, South Carolina, Florida, Kansas, Nebraska, Wyoming, Montana, Idaho, Nevada, California, and the District of Columbia in the United States. Married (1) August 23, 1890, at Portland, Oregon, Maude Mae Price; b. May 31, 1873, daughter of Milton Z. born in Wisconsin, and Helen Mae (Cole) b. in Athens, Maine. G. E. Verrill and M. M. divorced 1908. Children, viz:

- (a) Addison Emery II, b. August 24, 1892 at New Haven, Connecticut. Attended Hopkins Grammar School in New Haven and a military school in New Jer-

- sey. Married four times but no children. Died March 1, 1956 in Van Nuys, California.
- (b) Flora Helen, b. May 17, 1896, in New Haven, Connecticut. Unmarried. G. E. Verrill married (2) June 3, 1912, at Chico, California, Amy Christina Doane, b. March 16, 1884, at Carson City, Nevada, eldest daughter of Jonathan and Lydia Emma (Verrill) Doane, (see record of children of George W. Verrill.) Children of George E. and Amy C. Verrill, all born in New Haven, viz:
- (a) Ruth, b. April 28, 1916; graduated 1935 from Santa Barbara, California, Business College; Married September 3, 1938, at San Pedro, California, Howard James McQuigg, b. March 9, 1916, at Chester, Montana, son of James Mahlon McQuigg, b. Wooster, Ohio, and Alice Mae (Cross), b. Minot, North Dakota. Children of Ruth and Howard McQuigg, viz.: Howard James Jr., b. January 18, 1943 at Long Beach, California, d. January 19, 1943. John Alan, b. December 3, 1943, at Long Beach. Jean Eileen, b. January 14, 1926, at Long Beach.
- (b) Eunice Mildred, b. February 4, 1920; graduated from Stanford University June 1942. Married August 30, 1942 at Stanford, Henry F. Norberg Jr., b. December 22, 1920, at Oakland, California, son of Henry F. Norberg of Kearney, Nebraska and Frances May (Fortune) of Sioux Falls, South Dakota. Children of Eunice and Henry Norberg; viz.: Martha Louise, b. September 2, 1944 at Palo Alto, California.
- (c) Joyce Hilborn, b. February 29, 1924. Attended Stanford University. Married March 14, 1945 at Palo Alto, Arthur Gene Smith of Princeville, Illinois, b. November 17, 1923, son of Milton B. and Sadie Smith.
2. Evelina Flora, b. November 11, 1869, d. July 10, 1870.
3. Alpheus Hyatt, b. July 23, 1871; attended Hopkins Grammar School and Yale Art School; artist, naturalist, explorer, and author of over a hundred books on a variety of subjects. Married twice: (1) January 21, 1892, Kathryn L. McCarthy of New Haven, Connecticut. Four children by this marriage, all born in New Haven, Connecticut.
- (a) Dorothy Imelda, b. July 25, 1893. Twice married (1) August 5, 1914 (later divorced) Thomas Edmund Yates, b. November 3, 1891 in Hartford, Connecticut, son of Chas. E. Yates of Worcestershire, England, and Mary (Oakes) of Liverpool, England. Children of Dorothy and Thomas Yates, both born in Hartford, Connecticut, viz.: Yvonne Verrill, b. March 30, 1918, and Susan Catherine, b. May 5, 1921. Dorothy Yates married Russell Rhodes, June 4, 1932. One child, Westell.
- (b) Eric E., b. April, 1895. Married September 15, 1917 to Marian Davis Hubbs. No children. Died January 1936.
- (c) Loyola Kathleen, b. October 26, 1901. Married September 1920, Frank Cintron Jr., (Francisco Pedro Cintron y Ramos), born in Puerto Rico. Children of Lola and Frank Cintron: Robert Wayne, b. August 1921, lived a week. Consuela Cathleen, b. August 1922 in Antofagasta, Chili. She has become a successful bull fighter. David, b. in Lima, Peru.
- (d) Valerie Gertrude, b. October 28, 1903. Married November 19, 1923, at Antofagasta, Chili, to Percy Alfred Charles Ellis, b. December 29, 1898 in London, England. Children of Valerie and Bob Ellis: Anthony Charles, b. November 2, 1924, died June 7, 1925. Michael Barton, b. November 14, 1926.

A. Hyatt Verrill married (2) November 11, 1944, at Trenton, Florida, Lida Ruth Shaw, b. December 24, 1900, at Marchfield, Vermont.

4. Edith Barton, b. August 2, 1875. Married July 7, 1915, at Norway, Maine, to Vivian Milner Akers, b. December 6, 1886, son of Chas. Sylvanus Akers and Effie (Milner) of Norway, Maine. No children.
5. Clarence Sidney, b. May 6, 1877. Studied at Yale and became a mining engineer. While at Yale became known as "the strong man of American Universities." Was lost when the Princess Sophia was wrecked off the coast of Alaska October 25, 1918. Married November 6, 1906 at Los Angeles, California to Dorothy Lord Maltby, b. May 16, 1877, daughter of Geo. E. Maltby of New Haven, Connecticut. Children of Clarence and Dorothy Verrill:
 - (a) Rae Maltby, b. September 2, 1907, at Soulsbyville, California. Married January 7, 1928, Ralph Gordon McDiarmid, born in South Africa, son of Malcolm McDiarmid of North Vancouver. Children of Rae and Ralph McDiarmid; Colin b. July 22, 1931. Neil V., b. January 6, 1934. Glenyss, b. February 19, 1935.
6. Lucy Lavina, b. May 26, 1882. Married February 6, 1904 to Samuel Henry Howe, Jr., son of Rev. S. H. Howe of Norwich, Connecticut, b. September 24, 1884, at Georgetown, District of Columbia. One son of Lucy and Sam Howe:
 - (a) Marshall Victor, b. April 5, 1905, in New York City. Married August 25, 1928 to Katherine L. Mallett of Norwich, Connecticut. No children.

PART V

EARLY LIFE AND RECOLLECTIONS OF ADDISON E. VERRILL

*Written by Himself**

I was born on my father's farm on Patch, or Furlong Mountain in Greenwood, Maine, where my father lived for about six or seven years, probably from 1838 to 1844.

I was named for Nathan Addison Emery, a close friend of my parents, who was born October 25, 1813, and was killed by a fall while working on a new building with my father in April, 1839, soon after my birth. Moses Emery, Jr., his father, was a Methodist preacher and the first male child born in Minot and for that reason was given a grant of 50 acres of land by the town. His grandfather, Moses Emery, Sr., was the third settler of Bakerstown and built the first mills there.

I can remember various events connected with our farm life before 1843. I remember being badly scared, while I wore petticoats, by being chased by a flock of hissing and gabbling geese. The old gander caught hold of my skirts with his beak but my grandmother drove them off. I was then probably between two and three years old. Later, while the land was being cleared of stones, I was once knocked down and my feet and ankles were run over by a stone drag loaded with boulders and stones. The drag was drawn by oxen driven by my uncle, Theodore Verrill. This was when I was about three years old. About that time I remember that my father worked evenings and rainy days finishing some of the rooms in the new house on Patch Mountain.

*This early autobiography of my father has been compiled from several articles (some in his own handwriting and some type written) and numerous notes which were among his papers. Some of the articles were apparently intended for publication. The longest one (7 pp.) is entitled "How I Became a Naturalist." Another is headed "Hunting for Rare Minerals." His recollections of his early childhood appear, for the most part, in various places among his notes regarding genealogy and family life.

Many of the facts appear in two or more articles but often in somewhat different words. In order to get the facts together and make a connected story, in chronological order, of his early life, it was necessary to somewhat rearrange some portions of some of the articles and notes and fit together the various facts from all of them. In doing this my father's original wording has been strictly preserved and no additional matter has been introduced, so that it is entirely an autobiography of his early life.

I was interested to see him plane big pine boards and cut the grooves and beading by hand, for there were no planing mills there then. The blocks that he sawed off and the long, curled shavings were our favorite playthings in those days. Also I remember a whipping that I got when about 3½ years old (in the summer of 1842) and of catching a "lizard," as we were told to call it, but it was really a large, spotted salamander (*Ambystoma punctatum*). My sister, Araminta, and I carried it home and when we were told it was "poison" (really it was entirely harmless) we chopped it into several pieces and were surprised because all the pieces wriggled. That made a great impression on me.

I also remember that while living in that house we children had all the children's diseases: scarlet fever, chicken pox, measles, etc., all four children being sick together. I had scarlet fever very badly, especially in my throat, so, by the advice of some old woman, they held a big bull-frog in front of my mouth "to suck out the fever." I remember that I was badly scared by the big eyes and mouth of the frog. Byron nearly died at that time of measles.

While living there, probably in 1842 or 1843, in summer, I remember that Byron was very unwilling to go to school the first day or two because he was bashful and that after he had started and returned several times, mother followed him some distance with a stick and made him go. I was too young to go to school, for which I was glad. I think my older sister was also too young then. She and I used to go berrying together. One day we were frightened by what we thought was thunder out of a clear sky and ran home. It proved to be a distant powder mill explosion.

A cousin from Minot, I think his name was Joseph, a son of Uncle Cyrus Verrill, lived with us about this time and helped father on the farm. He died of tuberculosis soon after returning home to Minot and I recollect the sorrow of my parents but I do not remember the year of his death.

I remember that while living on that farm we had a famous, big tomcat that used to go hunting in the nearby woods and bring home lots of game, such as squirrels, partridges and even rabbits. He always laid his catch at mother's feet and then rubbed against her skirts with his back arched and tail elevated, waiting for her approval. When she stroked his back and called him "good cat" he was satisfied and immediately started out again for another catch. The woods were then not far away and game was very plentiful.

My mother at that time was a very energetic and capable young woman and a very kind mother. She did all the housework, dairy work, etc., was a good cook and also made all the clothes for the children, for she had learned the trade of tailoress before her marriage.

I remember my great-grandmother Tryphosa Cordwell as a white-haired very old lady, sick in bed at the house of her son and that she wanted me to go in and see her, which I did, and I remember her death and funeral. She died June 6, 1844, in the house of her son, Elijah, on Furlong Mountain in Greenwood.

When about five years old I first went to school on Patch Mountain. I remember that while at school, in summer, lightning struck a tree nearby, in the graveyard, badly frightening us all and that in winter the big boys built great snow forts and had thrilling battles, tearing the attacked forts in pieces with fence rails, if they could. One day a large boy who was hurt and appeared to be, or pretended to be unconscious, was buried in the snow by the others and left there until missed by the teacher. When rescued he was nearly dead indeed and it took a long time to bring him to. In summer the school was taught by a young lady whom the larger boys called "very pretty" but in winter it took a stern man to control many of the big unruly boys. My father had been a teacher before his marriage and always was willing to help his children with their studies.

It was in the fall of 1843, or the following winter, that my father was obliged to give up farming and house building because he was terribly injured, in fact nearly killed, by a load of hay (I think on a sled) turning over upon him. I remember that he was brought in unconscious, as if dead. This accident, from which he never entirely recovered, injured his back and produced a bad hernia. As a result he was incapable of doing hard labor for some years and hence had to give up farming. Before the accident he had been locally famous for his great strength and endurance. When a boy I used to hear old men tell stories of my father's former feats of great strength.

In 1844, I think in the autumn, we left the farm on Patch Mountain, moved to North Norway and occupied the Charles Penley place and I think father also conducted the store there previously occupied by Penley. I can fix this date by remembering that my father while on the way to North Norway with a load of household goods, on top of which I was riding with my older sister, met an acquaintance and stopped to talk with him. The man asked our ages and I remember clearly that my father said I was five years old. Probably it was the first time that the matter of my age had seemed to me of any importance. Our arrival in North Norway is impressed on my mind by the fact that it was near evening and while exploring the new home with my sister, rushing into all the rooms as children will, in my haste to get ahead I hurriedly opened the cellar door and pitched headlong down the cellar stairs against the stone wall at the bottom, rendering me un-

conscious and nearly killing myself. I was ill in bed for some time and when I was able to go out there was snow on the ground and the rabbits were white.

I think my father remained in North Norway only one year, leasing the place for that time, and then moved to Greenwood City and took the store there which he conducted until he removed to Lockes Mills in the spring of 1850. He conducted the Greenwood City store from 1845 to February or March, 1850, living most of the time in the double house which he and his brother Benjamin had previously built. In 1849 to 1850 we lived in the corner house across the street. In that house I remember that my brother, Edgar Freeland, was born January 4, 1850, and that my older sister, Araminta Maria, died there of pneumonia, February 5, 1850.

In consequence of the great boom in business due to the construction of the Portland and Montreal railroad (Grand Trunk R.R.), my father moved to Lockes Mills early in 1850 and conducted a store there for about a year, or perhaps 18 months, while good business lasted. Just north of that village there was a rather extensive rock cut which, in those days, required a long time to finish and large numbers of Irish laborers were employed there and elsewhere along the line. They bought their supplies largely from my father's store. As soon as the railroad was completed beyond that place and the laborers were taken elsewhere, business quickly subsided to about its former dull level and father moved back to Greenwood City, probably in the fall of 1851, and resumed business there for a time. But the building of the railroad had already diverted business from that village to places several miles away along the railroad, especially to West Paris and Norway. Therefore he moved to Norway in the winter or early spring of 1853.

In Norway Village we lived first, for a few months, in a house on Pleasant Street, that is still standing. In the meantime father had bought, repaired and enlarged a house on Main Street, about opposite the head of Paris Street and opposite the site of the present Congregational Church. That house was burned in the fire of 1889 and was replaced by a new house which was burned in the great fire of 1894. At first father occupied, for a few years, the store still standing on the corner opposite the Elm House. Later, Smith Bartlett built a new store adjacent, which my father occupied until his death. That store escaped the great fire, which burned the building next south of it, and it is now Atherton's furniture store. My father's store was a sort of department store, for he kept all sorts of goods, including dry goods, dress goods, groceries, and hardware and bought all kinds of farm products, including grain, eggs, butter, potatoes, apples, wool, furs, lumber, poultry, horses, hogs, cows, etc. One or more of his sons always helped in the store, while the others went to school, taking turns at each.

As a boy I first became interested in minerals when I was, perhaps, ten years old and was living in Greenwood Village. That region is mountainous and the rocks and ledges are mostly of granite, containing many interesting mineral veins, in some of them crystals of great beauty and some rare. I used to hunt the granite ledges for crystals of tourmaline and plates and crystals of mica, or "isinglass" as grandfather called it, which was common there, both black and white varieties.

My interest in minerals was very much increased about this time by the discovery, near the village, of a remarkable vein of magnificiently crystalized quartz. Some of the finest slabs of quartz were covered with upright, transparent crystals of all sizes, up to six inches in diameter and down to slender, needle-like crystals. My father quarried out some of the finest slabs and kept them as ornaments in his house and store for years. Ignorant and reckless persons soon ruined the supply in the open vein by breaking off the more prominent single crystals with hammers, much to my disgust. Had this vein been properly worked it would have yielded some of the largest and finest cabinet specimens ever found in this country.

I soon commenced to make a collection of minerals. At that time I walked two miles to school with my younger brother and returning from school we hunted minerals and found some of much beauty. Within a year I had made quite a collection, including some rare kinds that no one has found there since. One was a handsome, emerald-colored crystal of beryl; another was a fine, large, green crystal of Amazon stone; another was corundum in large crystals. I also had many fine masses of rose-quartz and quartz crystals, some large crystals of ordinary green beryl, red and black garnets, tourmaline, mica in large crystals, mispickel, spinel, pyrochlore and many other things. At that time I did not know the names nor the nature of many of these minerals, for there was nobody in that region who knew much about minerals or geology. Grandfather told me what he knew about the rocks and minerals, which was not very much, but he also told me that Dr. C. T. Jackson (of Boston) had surveyed the state a few years before and that I ought to see him and ask him about the rocks, for he was a very learned man. A little later Dr. Jackson's reports on the geology of Maine were among my most treasured and most often reread books. About a dozen years later I was associated with Dr. Jackson as an officer of the Boston Society of Natural History and I had the pleasure of telling him how much his reports had helped me in my early efforts to study geology by myself.

When I was about twelve years old my father obtained for me Dana's small Manual of Mineralogy but I then little thought that eventually I would be the colleague of that eminent scientific man in Yale University. Later I

also obtained Professor Asa Gray's Manual of Botany, little thinking that subsequently I would be a student under him at Harvard. As for chemistry, the only textbook that I could get was Stockhardt's Principles of Chemistry, a rather voluminous translation from the German and full of experiments, all of which I tried when I could get the materials. These books made me very happy and ever afterwards I had some sort of a laboratory where I tried many and curious experiments in chemistry and determinative mineralogy, for there was no one in that county to give me advice or instruction in any such studies. In 1852 I persuaded our very amiable school teacher, Lydia Whittle, to hear me recite lessons in chemistry but I had to walk two miles to her school, which was not in our district. My parents were not interested in these subjects but they permitted me to study them all I pleased, so long as I also attended to my regular school studies and my duties about the house and garden. They also insisted that I must earn the money with which to buy the extra books and all of the chemicals and instruments that I needed and could not make. This forced me to earn many dollars by trapping minks, etc.; collecting medicinal herbs for druggists in Portland; getting Canada balsam from the balsam firs in winter, and in various other simple ways.

When I was fourteen years old we moved to Norway Village, a much larger place but equally without anyone interested in nature studies with whom I could converse. Text books on any of the natural sciences were then few and hard to get and I found it almost impossible to obtain, even in Portland, the simplest apparatus and many common chemicals that I needed. There was then little or no demand for them. I had to make many of my chemicals and also my own blowpipe and alcohol lamp for testing my minerals to find out what they were. So I got permission to work, when I could, in Mr. Higgins' tin shop and soon learned to make all sorts of things that I needed. I made a good tin blowpipe with a bulb but it bothered me to find anything for a fine-bored nozzle. Finally I found one of my father's old, discarded, silver pencils, used in those days. The tip was of steel and had a fine bore. This I soldered to my blowpipe and it was all right. I used it for several years and still have it as a curiosity.

Norway was only about five miles from Mount Mica in Paris, which had already become famous for the rare and beautiful red, pink and green tourmaline crystals found there, as well as for other rare minerals, such as lepidolite. As soon as the snow was gone in the spring I went there with my eldest brother, Byron. We found that the place was a bare, rounded ledge on the top of a low hill in a cow pasture—not in the least like a mountain. The mineral vein was a large one, composed mainly of white felspar and large crystals of white mica with many masses of purple lepidolite, a mineral

then uncommon and notable for containing the rare metals rubidium and caesium, which at that time had not been discovered. The vein had then been worked very little, although many fine gems had been found. A pit six to eight feet wide and about five feet deep had been blasted out. We were permitted by the owner of the farm to blast there at one dollar a shot. We had neither the strength nor the time to drill very deep holes, nor many of any kind, yet we found many good specimens and some things never found there before. Among these were masses of tin ore, one of them weighing nearly four pounds. Tin ore at that time had been found in the United States only once before in New Hampshire in very small quantities.

Having to depend upon myself alone, with the aid of the few books available and my home-made blowpipe and tin alcohol lamp, I learned to identify nearly all the minerals which I found. Soon I had a fine collection for I obtained many new ones by exchanging with several far away collectors.

When about fifteen years old I became interested in botany and began to collect, identify and preserve every wild plant or fern that I could find. For this work I had a good text book by Prof. Asa Gray of Harvard. I kept a note book recording the earliest date when I found any plant in flower; also when I saw the first bird of each kind and the first nest of each; also the first of each kind of butterflies I saw in the spring. I kept this up for five years and eventually had a mounted and labelled collection of nearly all the flowering plants and the ferns of Maine and some from other states, in all about a thousand kinds—and I knew nearly all of them at sight and also their Latin names. My boyhood studies in botany have been a great blessing to me all my life. I would recommend it as a good study for all boys, at least enough of it to learn the names and uses and peculiar structures of the common plants wherever they live.

About 1856 I began to collect and mount birds, at first in a small way but more largely in 1857 to 1859. Before I went to Harvard, early in May, 1859, I had a good collection of about two hundred mounted birds, including a fine pair of bald eagles. Later Prof. Louis Agassiz bought my birds and mammals for the museum at Harvard. I also collected all the land and fresh water shells and all the reptiles and smaller mammals with the skeletons or skulls of some of the larger ones. Also many of the larger and brightly colored insects but I did not try to make a large collection of insects. In fact all the available room in the house was already pretty well crowded with my things before I left home and many visitors were constantly coming to see them.

During the years when I was collecting and studying specimens at Norway, 1853 to 1859, I nearly always worked alone. Although my two oldest

brothers were not much interested in my work, one or the other would sometimes go with me on hunting trips or on distant excursions when we used a horse and buggy, for my collecting trips eventually extended to the White Mountains, Albany, Buckfield, Poland, etc. Sometimes we were gone several days and once spent two weeks exploring the White Mountains. We carried a gun, geological hammers, botanical box, drying papers, alcohol bottles, etc.

It must not be supposed that making collections and studying them occupied a very large portion of my time. Except for the occasional trips which I have spoken of above, much of my collecting was done between daylight and 8 A. M., even in winter. Sometimes I could get an afternoon off but more often only an hour or two. Then I often had to go on the run to look after a certain flower or other things that I wanted. Most of my birds were mounted in the store chamber, either before breakfast or late at night. In those same years I attended the Academy or "Norway Liberal Institute," as it was called, and studied to fit myself for college. I managed to keep up well in all the studies required, including mathematics, Latin and some Greek. My two brothers and I took turns attending the school for at least one was needed to help our father in his business. Moreover, later my eldest brother, Byron, was Principal of the Academy from 1856 to 1859. Thus it was seldom that two of us could get away at the same time for hunting trips or even for short excursions. My father's store was open every day, except Sundays, from 8 A. M. to at least 9 P. M. and after that we often had to pack up the farm products to go to the railroad station, two miles away, early the next morning. We did most of our own carting.

To accomplish what I did as a boy I had to cut out some things that most boys like to indulge in, such as smoking, card playing and other time-consuming games, though I found some time for swimming, skating, coasting down steep Pikes Hill, playing ball and other athletic exercises. Most of the grown people there, as well as most of the boys, thought that I was foolishly wasting my time in collecting and studying specimens. Many years later I was told by some of the older men that they used to call me "The boy who knocks the rocks," as on my excursions I always carried a small geological hammer and usually a tin botanical box, and that many people thought I was more or less crazy. Yet in the end my practical knowledge of minerals and rocks enabled me to earn thousands of dollars as an expert in examining mines and minerals.

Mere collecting of natural history specimens helps much, because it cultivates the powers of observation and other faculties and leads to the study of habits of living things. To be most effective in education the specimens found should be carefully studied and correctly classified. There are now

published many excellent manuals and text books suitable for boys interested in any of these subjects, which was not the case when I was young, nor were there any public libraries nor free museums. It is, perhaps, needless to say that when I was a school boy no branch of natural history was taught in the schools in Norway or elsewhere.

Two years or more before I left Norway I learned how to make photographs and had a dark room of my own in my father's store chamber. In those days there were no dry plates or films known, nor any instantaneous cameras. We had to buy and clean plain glass plates, coat the plate with collodion, dip it in a bath of nitrate of silver and use it in the camera while still wet. When making a landscape or any other picture at a distance, I had to run each way to keep the plate from drying. It had to be developed and fixed at once. Photographs on paper were then just coming into use. I made the first paper photograph I ever saw by following the directions in some book. I bought plain paper and sensitized it myself. It turned out to be a very good picture, as decided in later years, but when made we did not know whether it was good or not, never having seen any other. Subsequently I made a folding dark room of black cloth and took it with me when photographing at a distance. Early in my photography I had to make my own silver nitrate and gold chloride by desolving silver and gold coins. I also made my own collodion.

I managed to enter Harvard at the age of twenty years; graduated at twenty-three, and was appointed to a full professorship of zoology at Yale when twenty-five. I taught there forty-three years, which is probably longer than any other scientific professor has taught at Yale. I also had charge of the zoological collections forty-six years and during twenty-four years I taught geology there in addition to zoology. I also held a professorship in the University of Wisconsin during three years, going there to lecture each spring. I mention these facts for the encouragement of other country boys who have to work as well as study, for what one boy has done, others can do. It might be added that I supported myself in college by acting as assistant to Prof. Louis Agassiz in the museum from 1860 to 1864. I then had entire charge of the birds, mammals and corals.

My efforts to interest other Norway boys of my age in nature studies were mostly failures. Yet during the last years of my residence there, a younger boy, Sidney I. Smith, eldest son of Elliot Smith, became much interested in collecting and studying the plants, insects and some other things. In this I aided him. He made large collections of insects and discovered some new and very interesting kinds. Part of his insects were subsequently sold to the museums at Harvard and Yale. He continued this work at Nor-

way until 1865, when he went to Yale University and entered the Scientific School a year in advance. He studied zoology with me in my old laboratory, torn down many years ago. After he graduated in 1867, he continued with me as an assistant until he was appointed Professor of Biology in 1875. He published numerous valuable scientific papers, mostly on insects and marine zoology, especially on crustacea, which was his specialty. His eyesight failed in 1901, cutting off his scientific work prematurely and forcing him to resign his university teaching. My success in interesting him in zoology and botany was doubtless one of the most important results of my work at Norway.

Great changes in education have come about and more will follow. It seems that I was the first man in the United States to be appointed to a professorship of zoology alone. Even Louis Agassiz had to be professor of zoology and geology. Now some of our universities have half a dozen professors in these sciences and lots of assistants. I had only one. The sciences are rapidly replacing many of the older studies, such as Latin and Greek, in most of the larger colleges and universities. A student can, even now, enter and graduate from Harvard or Yale and other universities without any knowledge of Latin or Greek. This change is a very recent and important innovation. When I became a professor in Yale (1864) the Scientific Department, called the Sheffield Scientific School, was a small affair, barely tolerated by some of the authorities and ridiculed by some of the members of the Classical Department. Eventually it was sometimes about as large as the Classical Department.

PARTIAL LIST
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CONSULTED BY

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